First Copy

*A National Newspaper for Every Branch of the Industry*

# Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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PUBLIC LIBRARY DETROIT

## Nash Adds Free Wheeling As Optional Equipment At Slight Additional Cost

### New Device Designed by Nash Engineers Provides Free Wheeling, at Will, in All Forward Speeds

KENOSHA, Wis., Aug. 6.—The Nash Motors Company announced today the introduction of a new type of free-wheeling which is a development of Nash engineers. The synchro-safety-shift-safety free-wheeling, as it is known, will be an added and optional feature, at extra cost, on the four new series of Nash automobiles. The new transmission is an over-rolling or one way clutch type.

The Nash synchro-shift-safety transmission with silent second gears continues as standard equipment on all models.

The Nash 900 series cars, recently introduced, were designed and built for free wheeling, the manufacturer states. In them larger generators care for battery charging, cooling systems serve idling motors; big, heavy-duty brake systems provide them with a great factor of safety and furnish ample braking power to care for free wheeling, and the entire car is engineered to the new performance requirements.

The new drive is actuated by a small shift lever, extending upward from the floor at the right of the driver, which permits shifting to

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### BORG & BECK BOOST PRODUCTION OF NEW VIBRATION DAMPER

**Chicago, Ill., Aug. 6.—Production has been stepped up in the last few weeks on the new type of vibration damper of the Borg & Beck Company, Chicago, division of Borg-Warner, to meet additional sales demands made by manufacturers and replacement parts dealers. Within the last month several new contracts for this product have been made with leading automobile and**

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### JAMES HEADS HUDSON ADVERTISING DIVISION

**Detroit, Mich.,** Aug. 6.—William A. James, assistant sales manager of the Hudson Motor Car Company, has been appointed to take charge of the advertising and sales promotion division of the company which is now being formed under his direction. He will continue his activities as assistant sales manager. He joined Hudson in 1919 and since that time has won consistent promotions in the service field advertising sales promotion and in executives capacities in the sales department.

During that time he has obtained wide first-hand knowledge of distributor and dealer methods and has successfully applied new methods of merchandising and sales. Mr. James has a wide acquaintance throughout the industry and in the advertising business, where he has established a reputation for his able researches and territorial analyses.

## *Studebaker's New 1½-Ton Truck Embodies Features of 2-Ton Model*

### Has Full-Floating Rear Axle and Is Offered on 130 And 160 Inch Wheel Bases, Priced $695-$775 Respectively

SOUTH BEND, Ind., Aug. 6.—The Studebaker Corporation of America announces today a new 1½-ton model embodying a full-floating rear axle at no advance in price. It is available in 130 and 160 chassis lengths priced at $695 and $775, at the factory.

The full-floating rear axle was especially designed for the 1½-ton chassis. The decision to use this type of construction, which has always been used in the two-ton model, was made because of its mechanical advantages, Studebaker officials state. The heavy forged pinion is straddle mounted.

The entire assembly is easily accessible by removing the cover plate of the banjo housing.

The axle shafts are of chrome alloy steel 1⅛ inch in diameter, with 1⅝-inch splines. The load is carried on the differential housing by tapered roller bearings. The differential case is also supported by bearings of this type. The axle center is a heavy malleable casting, with load-carrying tubes pressed in and welded. Spring seats are welded to the load-carrying tubes. Standard ratio is 5.66 to 1; optional ratios, 5.1 to 1 and 6.8 to 1.

The six-cylinder engine, with a bore of 3¼ inches and a stroke of 4⅛ inches, displaces 205 cubic inches, is continued The rated horse power is 25.4, and it develops 70 b. h. p. at 3,200 r. p. m. The power plant unit is secured in the frame channels by four brackets, and the front of the engine is supported in rubber. Cast iron pistons are used. The balanced crank shaft is mounted in four main bearings, which have a total length of 9 inches. Cam and accessory shafts are driven by a silent chain. An oil filter is included in the pressure lubrication system.

Fuel is supplied to the 1¼-inch plain tube carburetor by a fuel pump.

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### JOHNSON RESIGNS AS HUDSON SALES MANAGER

**Detroit,** Aug. 6.—Announcement was made this morning that Courtney Johnson has resigned as general sales manager of the Hudson Motor Car Company. As to his future plans nothing is said. Johnson joined Hudson in 1924 and was appointed general manager in 1928.

### NEW STARTER DEVELOPM'T BY DETROIT CAR MAKER

**Detroit,** Aug. 6.—Something more definite than the usual rumor popped up this morning in a statement issued by one of the leading motor car companies of Detroit whose identity is a secret for the time being. The statement reads as follows:

"Announcement will be made in a few days of an important improvement that, it is claimed, enhances driving pleasure immeasurably. By turning the ignition key 'on' the engine is automatically cranked until it starts under its own power without the use of the conventional starter pedal or button. If for any reason the engine stalls in traffic restarting is automatc. Engineers claim this is one of the oustanding improvements of the year."

## *Graham to Pay Salesmen Salary Under New Plan to Aid Dealers*

DETROIT, Aug. 6.—Employment for hundreds of additional salesmen in the United States and Canada, at a regular salary plus commission, will be provided under a new plan put in effect by the Graham-Paige Motors Corporation, which has notified its dealers that it will participate in the compensation of their salesmen.

So far as is known, this is the first instance in the industry of a motor car factory's sharing in the paying of retail salesmen's salaries, and the first attempt to put motor car salesmen on a regular income basis throughout a factory's dealer organization.

In its announcement of the new plan to its dealers, the Graham company declares that there is no limit to the number of salesmen each dealer may add.

Factory participation in the hiring and paying of salesmen was

(Continued on Page 4)

### GENERAL MOTORS DECLARES USUAL QUARTERLY DIVIDEND

**Detroit,** Aug. 6.—In line with expectations, General Motors yesterday declared the regular guarterly dividend of 75 cents on the 43,500-000 shares of common stock outstanding. This means a payment to stockholders of $32,625,000.

The directors also declared the usual quarterly dividend on the 5 per cent. preferred shares.

### $2,769,865 NET FOR HALF BY ELECTRIC AUTO-LITE

**New York,** Aug. 6.—Electric Auto-Lite Company and subsidiaries report for six months ended June 30, 1931, net profit of $2,769,865 after depreciation, interest, Federal taxes, etc.

## N. A. C. C. ESTIMATES JULY OUTPUT AT 221,485 UNITS

NEW YORK, Aug. 6.—The National Automobile Chamber of Commerce today announced its estimate of July 1931, production of motor vehicle units, placing the total at 221,485. This compares with a June, 1931, output of 249, the revised figure presented by the Department of Comm in Washington.

The July decrease under June amounts to approximately 14 per cent. The figure also compares with the July, 1930, production total, which was announced by the Department of Commerce as 275,721 units. The decrease in this case amounts to about 20 per cent.

The production total for the first seven months of 1931 now stands at 1,855,933. While this is subject to revision by the Department of Commerce official figures, which will be released late in August, the decrease is approximately 28 per cent. under the total for the seven months a year ago. The Department of Commerce total for the first seven months of 1930 was 2,602,784 is interesting to note that ture was 33 per cent. be record total for seven mont lished in 1929.

There is some satisfact found in the fact that th decline from June to Jul —14 per cent.—is less th decline from June to when the drop represe cent. The N. A. C. C. plan for general ann new models during th is largely responsible ing of the decline a continuance of t throughout the sum

## Late News Flashes

**Barcelona, Spain, Aug. 6.—There are 62,000 strikers in this territory, but the unions have authorized employees in the Ford plant to remain at work, because of the high wages they receive.**

* * *

**Akron, O., Aug. 6.—The Goodyear Tire and Rubber Company has declared the regular quarterly dividend of $1.75 on the first preferred stock, payable October 1 to stockholders of record September 1.**

* * *

**Philadelphia, Aug. 6.—The Delaware River joint commission, created by New Jersey and Pennsylvania to take over the Camden-Philadelphia bridge, is planning to take bids on $10,000,000 worth of bonds, the money to be used to refund to the two states their investment in the bridge and to meet the cost of a high-speed transit line on the structure.**

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# Nash Adds Free Wheeling As Optional Equipment

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the free wheel or out of it into the conventional drive. This makes the regular transmission available at all times to control the car through motor compression when conditions dictate.

When forward, the shift lever provides positive transmission action. Pulled back, it affords free wheeling. The free-wheeling feature is possible in all three forward speeds. It has no effect on driving performance when not in use, but may be shifted in or out of the drive at any speed. The Nash system is entirely selective, easy to operate and simple in its action, it is claimed.

In starting it allows the car to roll forward smoothly through low, second and high. When it is operating, the clutch pedal does not have to be depressed in shifting gears either forward or back.

The synchro-shift-safety free-wheeling consists of an over-rolling or one-way clutch mechanism, which transmits power while being rotated in one direction, but rolls free when its direction is reversed. It is of the advanced, roller type, with a maximum of roller bearings. All wearing parts are made of electric furnace alloy steel.

## HUPP ACQUIRED 21 NEW DEALERS DURING PAST MONTH

**Detroit, Mich.,** Aug. 6.—New dealers signed by the Hupp Motor Car Corporation during the month of July totaled twenty-one, according to a statement from factory headquarters in Detroit today. By states these new Hupmobile representatives include:

McConnell Brothers Motor Company of Biringham, and Ducan Auto Company of Birmingham, Ala., Automotive Service Company of Salinas, Cal.; Besch Brothers Motor Sales, Inc., of Naperville, Ill.; Mohnike Garage of Burlington, H. E. Wilkinson of Iowa City and R. C. Prunty of Mapleton, Ia.; H. R. Baker Motors of Covington, Ky.; Mark H. Mosher of Temple, Me.; Retail Division of Hupmobile Michigan Sales Corporation, Detroit, and Ackerman Motor Sales of Detroit, Mich.; Zidie J. Paul of Minto, New Brunswick; Hogan Motor Sales of Salamanca, N. Y.; Shisler Automobile Company of Columbus, O.; F. R. Musselman of Easton and L. J. Borges of Middletown, Pa.; D. Spencer Clark of Provo, Utah; W. C. Gibson, Jr., of Beaver Dam, Joe's Service Station of Port Washington and Huelsman-Wohlwender, Inc., of Fond du Lac, Wis.; Messrs. Zabel & Heffernan of Peace River, Alberta.

## NEW SALES OUTLETS ANNOUNCED BY RUSCO

**Middletown, Conn.,** Aug 6.—The Russell Manufacturing Company, manufacturer of Rusco brake linings and more than 400 other automotive fabric products, announces the appointment of the following new outlets for the entire Rusco line:

Northwestern Machine and Welding Company, Butte, Mont., jobber of replacement parts including clutch plates and Durak liners.

New distributors—Scurry & Nixon, Greenville, S. C.; Noel's Auto Electric Service, Jackson, Miss. (branch at McComb, Miss.); Valdosta Auto Parts Company, Valdosta, Ga.; Campbell's Service and Sales, Middletown Turnpike West, Manchester, Conn.; Cambridge Tire Exchange, 325 Prospect St., Cambridge, Mass.; Weir's Wheel Works, Inc., Blandina St., Utica, N. Y.

## PACKARD REPORTS NET $90,120 HALF YEAR LOSS

**Detroit,** Aug. 6.—Packard Motor Car Company reports for six months ended June 30, 1931, a net loss of $90,120 after all charges, including depreciation.

Net profit for the quarter ended March 31, 1931, was $113,004. For the quarter ended June 30, 1931, net loss was $203,125 after all charges, including depreciation and a large part of the expense incidental to tooling up for the new models recently introduced.

In the quarter ended June 30, 1930, net profit was $2,874,590, equal to 19 cents a share earned on 15,000,000 shares of no-par capital stock. In the first half of 1930 net profit was $5,528,837 on 36 cents a share.

The company announced new model Packard eights—its Continental series—on June 23, 1931.

### PHILADELPHIA SHOWS CUT OF 10% IN MOTOR DEATHS

**Philadelphia,** Aug. 6.—A reduction of 10 per cent. in the number of automobile fatalities here in the first seven months of this year, ompared to the corresponding pe-iod of 1930, is noted in a report mpiled by Coroner Fred Schwartz. rom January 1 to July 31 of this r, the number of fatalities was compared to 222 for the first months of 1930. Fewer young ns met death this year in nanner. Stringent prosecu- reckless drivers, the spread- nstruction in safety prin- d changes in the state hicle code contributed to se.

## RECIPROCITY ON TRUCKS, DESIRED BY VIRGINIA, TO BE AIM OF CONFERENCE

**Richmond, Va.,** Aug. 6 (UTPS).—Reciprocity agreements under which out-of-state trucks are allowed to transact business across the borders of other commonwealths will be discussed August 16 at a conference at White Sulphur Springs, W. Va., it has been learned here. T. McCall Frazier, motor vehicle commissioner for Virginia, will attend with similar officials from West Virginia and Ohio.

The question of reciprocity has become generally muddled lately and one result was that a Richmond truck driver recently was required to pay $85 before being allowed to leave Atlanta, Ga., with a load of furniture.

Commissioner Frazier protested to Georgia authorities that the truckman claimed he had obtained official permission to enter the state. Georgia officials denied this, claiming the driver actually was not arrested. It was admitted, however, that he paid $60 "mileage tax" and a $25 "tag fee."

## GRAHAM-PAIGE WIDENS DUTIES OF MILES HERRON

**Detroit, Mich.,** Aug. 6.—Miles D. Herron, who has been manager of the commercial car division of the Graham-Paige Motors Corporation since July, 1929, has been appointed district manager over the territory comprising Maryland, Virginia and the District of Columbia, with headquarters at Washington. In his new capacity, Herron will be in full charge of sales to United States government departments of both passenger and commercial cars.

He has been associated with the three Graham brothers since 1923, when he became Seattle manager for the Graham Truck Company.

## DIX BODY ADDS 50 MEN ON $100,000 ORDER

**Memphis, Tenn.,** Aug. 6.—John C. Dix & Son, Al Goldfarb manager, has added fifty additional men at the plant, 738 South Dudley St., The additions were made to complete a $100,000 order for school bus bodies to be delivered by September.

The bodies will be sixteen feet long and 76 inches wide. They will have hardwood frames and covered on the outside with automobile steel. The seats will be of leather. The uptown plant of John C. Dix & Son is on Poplar Avenue, near Third Street, and is one of the pioneer vehicle firms of Memphis.

## LINK BELT MAINTAINS STEADY SALES; PROFIT OF 451,981 FIRST HALF

**CHICAGO, Aug. 6.—Link Belt Company's diversified line of products has enabled it to maintain a fairly uniform trend in the volume of incoming sales for the past seven or eight months. The trend of profits, however, has fluctuated widely. Some business was taken at little or no profit in order to keep the plants operating and to avoid disrupting its operating and selling organizations.**

These conditions were reflected in the mid-year report, which showed a ratio of operating expenses to net sales of 93.7 per cent., notwithstanding substantial reductions in operating expenses. In the first half of 1930 the ratio was 88.4 per cent., and in 1929 87.5 per cent.

Link Belt stands a good chance of handling as large a volume in the last half of this year as in the first, and officials feel confident that net for the last half will approximate that reported for the first six months. Sales in the first six months were $7,226,751.

Operations in the last half should reflect to a greater degree reductions in overhead and operating expenses effected in the first half, and in addition should benefit from a further reduction in operating expenses made on August 1, when the company made its first downward adjustment of factory wages by effecting a cut of 10 per cent. and shortening the working hours by placing all its factories and offices on a five-day week. As a result of this action, the company's factory pay rolls will be reduced a maximum of 18 per cent. for the balance of this year, and office pay rolls about 8 per cent. Office salaries were cut 10 per cent. last January 1.

If the company is able to show for the current six months period a net income about on a par with that reported for the six months ended June 30, net profit for the full year will amount to something in excess of $900,000 or about 90 cents a share on the common stock after preferred dividends.

**For the six months ended June 30, 1931, the company reported net profit of $451,981, or 45 cents a share, on 709,177 common shares after preferred dividends, compared with $1,306,199, or $1.65 a common share in the corresponding 1930 period.**

There was little difference from month to month in the volume of business handled in the first half, although profit trend was very irregular. Profits in the first two months of this year were about on a par with November, the poorest month last year, while March showed marked improvement, with April only a shade below March. Net in both May and June, however, slumped badly, with the result that the showing made for the second quarter was the poorest in several years, net amounting to $209,350, or 20 cents a share on 709,177 common shares after preferred dividends, as compared with $242,631, or 25 cents a share in the preceding quarter and $655,895, or 83 cents a share in the June quarter of 1930.

Link-Belt has maintained a strong liquid position despite the fact that dividend payments for close to a year have exceeded net profit. A cut of 5 cents a share in the common dividend to 60 cents quarterly was made effective March 1 and followed with a further reduction in June of 10 cents a share to 50 cents quarterly, effective with the September 1 payment. While the new $2 basis is still considerably higher than current and prospective earnings for the full present year, the company appears well fortified financially to continue the dividend.

Its balance sheet as of June 30 last showed cash of $3,178,530, as against total current liabilities of $1,082,900, which includes rese es and accruals. In addition the company had government securities of $523,220 and other investments carried at cost totaling more than $5,500,000. Considering existing conditions, collections still are good. Inventories at $3,302,603 were slightly lower than three months ago.

# SPARKS from DETROIT

**Perry Gartley, Merchant**

* * *

**Chrysler, Cops and Coppers**

* * *

**Roy Peed's Speed**

*Chris Sinsabaugh—Detroit Editor*

NOTHING like running your own shop is something Perry Gartley has had in the back of his mind for lo these twenty years he has been plugging along in the automobile industry. Always climbing up the ladder, of course, but always working for some one else. Now he is quitting the Exalted Order of Dignified Wearers of Brass Hats, for which he qualified as Western sales manager of Willys-Overland, to hang out a shingle in Chicago bearing the Gartley coat-of-arms—a go-getter rampant on an open order book.

As Willys distributor in Chicago, this Gartley chap is going to be able to put into execution all the ideas he has picked up on the various jobs he has held under factory direction for the past ten years—branch manager in Milwaukee and Detroit and for the past two years working out of Toledo. As a distributor—well, he ought to be able to show 'em some speed.

Knocking about in the industry as he does, the column conductor usually gets a pretty good line on the personalities he encounters, sifts the wheat from the chaff, as it were. Observance of the way Gartley works makes us feel that Willys is going to have strong representation in the Chicago field.

* * *

REMEMBER I'm telling you this one without any authority to back up the statements made therein. It's just something floating around Detroit that's worth a chuckle anyway and has to do with a unique way of paying a bet to Walter P. Chrysler.

As it came to me, the operating committee of the Chrysler Corporation was in serious session when four grim-looking cops, Sam Brown belted, automatics in each fist and each with canvas bags tucked under their arms, invaded the office, demanding to see the head of the house. None other would do. But Mr. Chrysler was too busy to be seen. That made no difference with the bluecoats—they must see the big boss himself. And the opposition faded away as the cops broke into the committee room.

The power of the law was too much for "floating power" and Mr. Chrysler surrendered. But it wasn't a pinch, not even an effort to sell tickets to the department's field day. The officers had the bags to deliver and solemnly, one by one, they plunked them down on the committee's table. In the bags were 10,000 pennies.

Then it came out. A prominent Detroit business man who had a pull with the Police Department, losing a $100 bet to Mr. Chrysler, had taken this way of meeting his obligation.

* * *

"THERE'S no 'repression,' as Andy would say, out at De Soto," bubbles over Roy Peed, on whose shoulders rests the responsibility of selling the cars that come off the line. "Last week we delivered 147 De Sotos more than we ever did before in any one week of the company's history. That spreads over three years and includes the time when we were in the boom times. Look at the calendar—the midsummer doldrums, yet we're certainly selling cars. And there are no signs of a letdown in the immediate future."

* * *

I LOOKED at the calendar as Peed suggested. Why, Saturday is tomorrow and tomorrow is the day when the vacation starts. I'll hurry and finish this column, grab the old suit case and hustle to catch the Wolverine—off for New York, with no column to worry about for at least a fortnight. But there will be a column just the same, else I couldn't get away. But it will be a "better and bigger" column, a surprise for those who have been kind enough to follow this tenpoint stuff of mine for the past year. I'm tipping you off about it now, but will not go into details until play-time starts for me.

One good thing about this vacation of mine, I wont have to wear out much shoe leather in rambling about Westchester county, thanks to Paul Hoffman, general sales manager of Studebaker. When the South Bend magnate heard of the Westchester plans, he informed me that a Studebaker would be placed at my disposal while I am there. I'm thanking him in advance for the pleasure I know I am going to have in really trying out free-wheeling. I'll know how to handle the Studebaker—my last car was one of that make.

# Month Service Bulletin Wins New Customers, Holds the Old

AN increase in business amounting to approximately 25 per cent. during the past eight months has been effected in the service department of the Lee Francis Motor Company, De Soto, Dodge and Plymouth dealer in San Antonio, Tex. through the monthly distribution of service bulletins featuring special offers for that current month.

These bulletins, mimeographed on stock 8½ by 14 inches and folded twice, are mailed out to approximately 2,000 motor car owners each month, who are, or have been, customers of this firm. The success of this plan and the manner in which it has been carried out is related by Lee Francis, vice-president and general manager of the firm.

"Each month for the past eight months," Mr. Francis explained, "we have been mailing out what we call our 'Lee Francis' Better Service Club News' to approximately 2,000 motor car owners whose names and addresses are listed in our books. This monthly bulletin was designed to increase business in our service department, to take advantage of seasonal opportunities and to bring into our shops car owners who were steady customers or who at one time had business with our firm.

* * *

"TO attract attention, we feature monthly special offers, in which regular service department work is offered at reduced prices. These offers are generally based on seasonal opportunities. For example, during the spring months we feature overhauling, car inspection and preparation of the car for the summer months, including necessary adjustments, etc.

"This year, for July, we stressed the fact that vacation time was at hand and this was the time to have the car made ready for the vacation trip so that the tour might be enjoyed without motor troubles and other motoring difficulties which might spoil the trip. These included brake inspection and adjustment for both two and four wheel brakes, dressing up the car for the vacation trip and refinishing the fenders, polishing the body and general touching up.

"We also offered a free inspection service during the month, which included inspection and tightening of the fan belt, tightening water pump packing nut, inspection of hose connections, draining and refilling of radiator and other minor inspections and adjustments which would help to put the car in good order.

* * *

"WE HAVE found it an excellent practice to itemize the work to be done. That is, on our two-wheel brake adjustment and relining, we place the charge for materials at $3.50, the charge for labor the same, and the total cost, $7. This shows the customer just what he is spending for his work.

"We also use comparative prices in featuring our specials. On the above mentioned work, the regular price for materials is $4 ,while the labor is $4.50, a total of $8.50. These figures are placed in regulation type at the top, crossed out, and below in larger figures the special prices for the month.

"This shows the customer just what he is saving, and serves as an incentive for having him bring in his car at once. This urge is necessary to make the bulletin effective. If we were to offer just the special prices for the month, there would be nothing to show what was being saved, and much of our effort might be wasted for lack of this information. The regular and special prices give the desired incentive for bringing in the results we wish.

* * *

"THE bulletin has proven very successful, not only in building up business in our service department, but in keeping all of our customers on our books. Previous to the time that we started the distribution of this bulletin, we found that many motor car owners, who had been doing business with us, had had their repair work done in other places. In some instances it was convenience, in others friendship, and in a few dissatisfaction. The bulletin has served as a strong agent in bringing them back.

* * *

**"IT IS worth mentioning right here that of the 2,000 persons whom we canvass in this manner each month, practically every one will come into our shops within four months.**

"We have brought in many customers who had not patronized our place for several years. We have established contact with many car owners who had purchased one of the makes of cars which we handle in other communities, but had heard of our service and came in to see what it was all about. We have established a firm relationship with hundreds of car owners who have become regular patrons of our service department, coming in not only for repair work but for oil and grease, lubrication and inspection, washing and polishing and other minor services.

"By making this contact we not only have their patronage in our service department but we consider them as ultimate prospects for a new car, and, since they are dealing with us, it is only reasonable to conclude that they will give us first preference in making their selection. Thus the entire business is benefited.

* * *

"IN addition to announcing service department specials for the current month, the bulletin is used for making announcements about new models that are being brought out, used car bargains, and any other important information which we wish distributed in this manner. The July bulletin carries the following announcement relative to the New Plymouth, which illustrates how prospects may be obtained in this manner:

"'We are sure you will be very much interested in seeing and driving the sensational new car with floating power just announced by Plymouth and now on display at our showrooms. Most every one heretofore buying a car at lowest prices has done so feeling deprived of many things desired in a modern motor car—now Plymouth completely upsets all standards of what you expect in the lowest price field. "Floating power" is an entirely new engineering feature in automobiles—it brings you the smoothness of an eight, yet retains all the economy of a fine four. This new Plymouth brings a car with a roomy body for comfort, double drop frame for new low swung beauty, safety steel body, hydraulic brakes, easy shifting transmission and free wheeling to the lowest price field. We invite you to see these remarkable cars.'

* * *

"THIS bulletin also contains mention of a Dodge 'eight' Marathon that has been in service a year, during which it has been driven 100,000 miles, and invites customers to visit the showrooms and learn more about the record this car has made.

"Thus, it may be seen, our bulletin is a messenger of timely information, served in an interesting manner, as well as a salesman for our service department. We have found that we will get far better returns through these monthly bulletins than through any other form of advertising. People will take time to read these little announcements quicker than they will newspapers or other mediums. We have many people come in soon after the bulletin has been mailed out, bringing the bulletin with them, in which some special offer has been featured. This is the best kind of evidence that it is being read and appreciated."

The Lee Francis Motor Company has established an enviable record for business building, and no small credit is due the monthly bulletin explained in this article. The cost is low, and, when the results are considered, it is the cheapest and most effective form of advertising available to automotive dealers.

## DETROIT'S PURCHASES OF HEAVY MACHINE TOOLS BRIGHTEN DULL SEASON

**New York**, Aug. 6.—Detroit's record of heavier machine-tool bookings in July than in June illuminates the blackness of an accentuated period of summer stagnancy in all other markets, American Machinist reports.

No relief is expected until possibly late in the fall. Needed machines remain unpurchased in a time of excellent prices and deliveries because financially minded executives maintain a strangle hold on company purse strings.

New York awaits action on navy and municipal inquiries, with few noteworthy developments. Cincinnati's sales are of single items to miscellaneous buyers. One builder of large tools in that district received several promising inquiries; others received a small number of scattered single inquiries, including a few from the navy.

**$30,385 LOSS IN FISCAL YEAR FOR NACHMAN SPRING-FILLED**

**Chicago**, Aug. 6. — Nachman Spring-Filled Corporation reports for fiscal year ended June 13, 1931, net loss of $30,385 after charges, depreciation and inventory adjustments. This compares with net profits in preceding fiscal year of $114,874, equal to $1.14 a share on 100,000 no-par shares of capital stock.

# Meet the Sales Chiefs

**VERSATILE, to say the least, has been the automotive equipment sales experience of D. D. (Marquette) Heimberger, sales manager of the Oildraulic Lift Company of Memphis, Tenn.**

His talents were first claimed by the Alemite Company in their pio-

neer days, where he spent two years making dealers and garage and car owners Alemite conscious.

Leaving this concession, he operated the second car washing establishment in the United States for three years. During this time he manufactured a patented car washing system, rights to which he subsequently sold to the Marquette Company, becoming connected with them as assisttant sales manager and later sales manager.

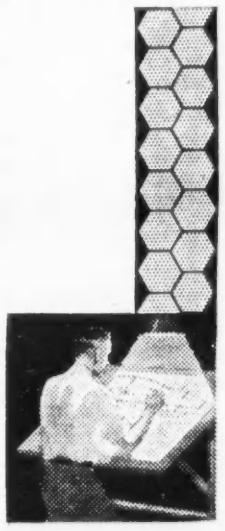
Since that time he has spent the last eleven years selling automotive equipment to the dealer and jobber trade. When Oildraulic adopted a direct jobbers policy, Heimberger was called to the head of the sales department of Oildraulic Lift Company, enabling him to continue to contact his jobber friends for the same product previously distributed to jobbers by Marquette Manufacturing Company. We feel sure that 'his host of friends among the jobbers in the automotive equipment field wish him continued success.

**SAVIDGE IS DISTRIBUTOR FOR NASH IN NORTHWEST**

**Seattle, Wash**, Aug. 6.—Announcement is made of the appointment of S. L. Savidge, Inc., as Nash distributor in Washington, Alaska, northern Iraho and western Montana. S. L. Savidge is president of the company; Bert L. Cocklin, general manager, and W. C. Hilligoss, director of sales.

**NEW CHEVROLET DEALER**

**Nashville, Tenn.**, Aug. 6. — The Yancey-Holt Chevrolet Company has been incorporated, with a capital stock of $20,000, by R. P. Yancey, Mrs. B. E. Holt and B. E. Holt.

WHILE YOUR NEW MODEL IS "ON THE BOARDS" INVESTIGATE THE HARRISON VISCON

OIL TEMPERATURE REGULATOR

Be sure to investigate the Harrison Viscon while there is still time to design it into your new models.

Many 1932 cars will have oil temperature regulation. A large proportion of the 1932 buyers already appreciate its advantages, and will be more favorably inclined toward the car that is standard-equipped with the Harrison Viscon.

The advantages resulting from the Harrison Viscon are provided at small cost—for this simplified device is well beyond the experimental stage, and is already being manufactured in large numbers for several leading engine builders.

A Harrison engineer will be glad to show you how the Viscon improves lubrication, reduces oil consumption, minimizes engine wear during the hazardous warm-up periods in winter, and maintains oil at its most efficient viscosity during the hot summer months.

Why not get the complete Viscon story now, while your car is still "on the boards?"

*Product of*

HARRISON RADIATOR CORP.
LOCKPORT NEW YORK

# Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
AUTOMOTIVE DAILY NEWS PUBLISHING CORPORATION,
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## *The Steel Barometer*

IN all probability the happening that has aroused the most general public interest in recent weeks was the reduction in dividend by the United States Steel Corporation. To the average man this probably represented the ultimate in confession of the seriousness of the present depression.

While hunting for silver linings is rather a bootless activity at the present moment, it is a fact that other factors in the situation give far more reason for hope than the ebb in the steel business does for fear.

When a depression such as the present one begins to pass, the first sign of improvement will show in what are known as consumption products. This means the goods that pass over store counters, foodstuffs, cigarettes, shoes, shirts, collars, clothing and all the countless things that human beings buy to provide for their normal daily comfort. During periods of distress purchases of even these products that go into everyday life are curtailed.

In the last major depression through which this country passed, that of 1921, the first lines of business that showed signs of revival were those handling consumption goods. The textile industry, the shoe business, foodstuff manufacturing led the way out of the depression of 1921. At this present very blue moment, the textile industry and the shoe business are showing definite signs of revival. In fact, they are doing extremely well.

It does not take any very deep analysis of the situation to indicate that it would be rather strange if the steel industry were not showing exactly the symptoms that it is. As a matter of fact the present condition in the steel industry indicates that we have finally reached the end of the cycle. There is every reason to believe that consumption businesses and the industries that supply these, will be well advanced on the upcurve toward revival before thé steel and other industries in that category show definite improvement.

One thing we must bear in mind, and that is that steel cannot, for the present, be considered as the barometer of business and market conditions which we have been taught to hold it.

## *Federation of Labor Sees Hope*

IN the current report issued by the American Federation of Labor this organization finds signs of improvement in business. This is the more satisfactory from the fact that this organization is not given to taking the fatuously optimistic side of things.

In part the report says: "Apart from influence of the German crisis, business at home is beginning to show tangible signs of progress. But no general upturn has yet appeared and a collapse in Germany might create panic and send trade downward in spite of improvements."

Confirming the contention of Automotive Daily News, ne Federation survey remarks: "A number of consumer ıdustries have definitely turned upward. Production of ıtomobile tires, shoes, wool goods and cotton goods have en moving up since the low point in November or Decem- . A slight down turn in the June dull season does not the definite upward trend. In major depressions an rn in consumer industries usually precedes recovery; ımer goods are sometimes called 'sensitive' industries se they show the first upturn. Clothing, tires and are bound to wear out, and workers and others who avings are forced to spend them. Several other con- ndustries also show signs of upturn."

as been our contention all along that the first sign ! would come in industries that produce products ıy need, which wear out. Here it is a case of placing needed products, not one of changing a nply getting something new. Replacement of 'at wears out can be put off just so long, then has to be made.

## CHEVROLET APPRENTICE SCHOOL IN FLINT TO BE DUPLICATED IN DETROIT

**DETROIT, Aug. 6.—Plans for the building and operation of a Chevrolet apprentice school of mechanical craftsmanship are announced by W. S. Knudson, president and general manager of the Chevrolet Motor Company.**

The school building, which will provide approximately 10,000 square feet of floor space, will be erected adjacent to the Chevrolet Detroit Gear and Axle Plant. Work on the proposed building will be started in the near future.

When completed, the school will be equipped with every type of machine necessary to all the finer mechanical arts and crafts, and the work will be directed by C. E. Wetherald, general manufacturing manager of Chevrolet.

The Chevrolet course will be an exact duplicate of the school operated by Chevrolet in Flint. While preference will be given to sons of Chevrolet employees, all boys mechanically inclined between the ages of 16 and 18 years, will be eligible to enter the Chevrolet school. The normal course will occupy four years, and the class will be limited to fifty boys.

"However," said Mr. Knudson, "there will be no hard and fast rules governing the lenght of time the apprentices will be required to attend the school. Experience has shown that some boys progress much faster than others and these gifted youngsters will be advanced as rapidly as their work justifies."

During the first three months all apprentices entering the school will be placed on probation; if their work justifies the interest shown in them, they will be carried on until they are graduated as skilled craftsmen.

While attending the school the apprentices will be carried on the payrolls under a gradulated pay scale. Upon completion of the course, the graduates will be assigned skilled work in one of the fifty-three Chevrolet plants located in various parts of the country.

The course as outlined by Mr. Wetherald includes instruction in tool-making, die-making, pattern-making and general machine shop practice.

### PHILADELPHIA NEW CAR SALES IN JUNE REDUCED

**Philadelphia**, Aug. 6.—Sales of new passenger automobiles were smaller than usual in June, according to the Business Review as of August 1, published by the Federal Reserve Bank of Philadelphia, covering the Third Federal Reserve District.

In the first six months of the year they fell off 23 per cent. from the like period last year. The market for used cars has, however, continued comparatively strong. Wholesale prices of automobiles, on the average, were 7 per cent. lower than a year ago.

## COMING EVENTS

SEPTEMBER

1- 3—**Cleveland, O.** Hotel Statler, Society of Automotive Engineers, twentieth annual aeronautical meeting in conjunction with National Air races.
8-17—**Utrecht, Holland.** Utrecht Fair, bus and truck show.
16-17—**Atlantic City, N. J.** National Petroleum Association, annual meeting, Hotel Traymore.
20-26—**Springfield, Mass.** Eastern States Exposition.
21-25—**Boston, Mass.** American Welding Society, meeting. The following societies will participate: American Society for Steel Treating, American Welding Society, Iron and Steel Division, A. S. M. E.; Machine Shop Practice Division, A. S. M. E.; Iron and Steel Division, A. I. M. E.; Institute of Metals, A. I. M. E.
28-29—**Atlantic City, N. J.** National Association of Motor Bus Operators, fifth annual meeting, Hotel Ambassador.
26-Oct. 2—**Atlantic City, N. J.** American Electric Railway Association, annual meeting.

OCTOBER

1-11—**Paris, France.** International Automobile Salon.
2- 3—**Houston, Tex.** American Institute of Mining and Metallurgical Engineers, petroleum division meeting.
12-16—**Chicago, Ill.** National Safety Council.
14-16—**Pittsburgh, Pa.** Society of Industrial Engineers, convention.
15-24—**London, England.** International Motor Exhibition, Olympia Hall.
22-28—**Prague, Czecho-Slovakia.** International Automobile Exposition.

## Contemporary Comment

FOR an accurate concept of the breadth of the task of administering to traffic safety, a thorough reading of the traffic code probably would be profitable to any New Jersey citizen. Furthermore, it is doubted that any person could read the code without finding it of genuine interest and full of surprises.

The public generally conceives of the traffic code as dealing primarily with motor vehicles and, somewhat incidentally, with pedestrians. I wonder how many persons are familiar with the fact that Article IV., one of the longest in the code and having twelve provisions, deals entirely with horses and horse-drawn vehicles.

It has some provisions that undoubtedly would pique the interest of any person and give him some information that is entirely new.

For instance, "speeding" is a term immediately associated with automobiles. Yet, the code forbids running or racing horses, even for the purpose of passing another horse, just as definitely as it puts a prohibition upon fast automobile operation.

Leaving oddities of the code for the moment, there are many subjects upon which the average man thinks he has correct information but a study of the code would disillusion him. An example may be found in the provision relating to pedestrians crossing streets and highways other than at designated crosswalks. Most persons have the impression that this practice is expressly forbidden. It is not, but the code states specifically how the pedestrian must walk in such circumstances. It requires that he shall cross at right angles to the curb; in other words, go straight across the street or highway, and that he must yield right-of-way to all vehicles.

Another provision relating to pedestrians that probably will come as a surprise to many is that covering crossing at intersections after the traffic light has switched against them. The code states that the pedestrian shall have the right to continue uninterrupted across the thoroughfare if, when he started to cross, the signal was in his favor.

To revert to the novelties in the regulations, some of the most interesting to the general public will be found in Article III. It covers the use of bicycles, roller skates, velocipedes, tricycles and similar vehicles of youthful transportation.

Section 3 of this article has not only novelty, but a large element of safety. It forbids "any trick or fancy riding in any street," and specifies that no bicycle rider shall carry another person on his vehicle. Another section of the same article will apprise motorists that bicycle riders or youngsters on roller skates are disobeying the law when they hitch rides on trolley cars or other vehicles.—**Harold G. Hoffman, Commissioner of Motor Vehicles, States of New Jersey, in United States Daily.**

## Graham to Pay Salaries To Dealer's Sales Force

(Continued from Page 1)

decided on, said C. W. Matheson, general sales manager, as a part of the company's comprehensive plan to build up sales activities now, during the slow season, to be ready for improved business in the fall and for the fruition of the company's program for greatly increased activity before the end of the year.

**"It is the general practice in the industry to let the dealer take the entire burden of paying his salesmen," said Mr. Matheson. "In normal times, that system is sound; but under existing conditions many dealers cannot afford to pay salesmen in preparation for the return of business, nor can a large number of salesmen exist on commissions alone.**

**"We expect, under our new plan permitting the dealer to build up a good staff of salesmen and giving the salesman an assured salary, to equip an expert force to sell our products in the future.**

"There are thousands of good salesmen now idle from whom we can choose those who are capable of earning a regular salary. We believe it is better to employ them now, when they need the money and our dealers need more salesmen.

"The automotive industry, under present conditions, has new problems to meet, and some of the methods of yesterday won't do today. Our factory, in its executive, engineering, and production departments, has undergone a realignment that puts it in a position to carry on with increased efficiency and economy, and to lay plans for taking full advantage of the future demand for motor cars in great numbers. Our decision to cooperate with our dealers in a salesmen's compensation plan is merely an extension of the factory policy to aid our retail outlets in order to better prepare them for the return of better business conditions."

### VIRGINIA MOTOR VEHICLE ROAD TAXES GAIN 18%

**Richmond, Va.**, Aug. 6 (UTPS).—Road taxes on motor vehicles operating under the supervision of the Virginia state corporation commission during the second quarter of this year, totaled $15,296.19, an increase of 18.9 per cent. over the first quarter, according to figures released by R. E. Steele, head of the commission's tax department.

### SELLS GARAGE INTEREST

**Manitowoc, Wis.**, Aug. 6.—Elmer Bleser has disposed of his interest in the Hamacheck-Bleser Buick Company to Daniel C. Bleser and Jule Hamacheck, firm members. The concern operates garages in Manitowoc, Two Rivers and Sheboygan, and was organized ten years ago.

### $21,417 FEES FOR IOWA

**Des Moines, Ia.**, Aug. 6.—Bus and truck lines paid $21,417.78 fees to the state during July, according to report of J. W. Long, state auditor, representing wheel tax and penalties under the motor vehicle law.

# The Philadelphia Daily News Advertising Gain for the Month of July Was 102,420 Lines

***Aside From the Above---***

***The DAILY NEWS is the Only Philadelphia Newspaper to Show an Advertising Gain for the First Six Months of 1931.***

***And Remember---***

***The DAILY NEWS Was the Only Paper in Philadelphia to Show a Gain for the First Seven Months of 1930.***

The people who consistently read the Philadelphia DAILY NEWS have money and spend money, and so make it profitable for advertisers in all lines. Automobiles can be sold to this money-spending group just as easily and profitably as pianos, radios or furniture can be sold to them. Every motor car maker should investigate this enormous market of PRESENT BUYERS represented by NEWS readers.

All of which is definite evidence that the DAILY NEWS *must* be the low-cost, prolific producer we have claimed it to be, in making the advertising dollar go farther.

PHILADELPHIA DAILY NEWS
THE PEOPLES PICTORIAL

## JULY BEST IN 2 YEARS FOR HEXCEL RADIATOR

**Milwaukee, Wis.,** Aug. 6.—July for the Hexcel Radiator Company of this city was the best month the firm has had in two years, according to F. M. Opitz, president, and August promises to be still better.

The company, which manufactures over 120 models of automobile radiators, recently opened warehouse branches at Los Angeles, San Francisco, Seattle, Dallas, Springfield, Mass., and Hamilton, Canada.

Since April, with an output of 2,000 units monthly, production has been stepped up to 6,500 radiators, in addition to the small heater units, also for automobiles.

According to Mr. Opitz, the company hopes to run at capacity beginning in November. This means a total force of between 200 and 250 and an output of some 2,500 units daily.

## SMITH NAMED PRESIDENT OF VACUUM CAN COMPANY

**Chicago,** Aug. 6. — Burton O. Smith has been elected president of the Vacuum Can Company of this city and vice-president of the General Chromium Corporation of Detroit, as well as a director of United Chromium, Inc., of New York, with which the vacuum company is affiliated.

## 218 CARS IN ILLINOIS CHEVROLET DRIVEAWAY

**Decatur, Ill.,** Aug. 6.—Chevrolet dealers in the Decatur zone last week staged an assembly plant driveaway with 218 passenger cars participating.

Only dealers in communities of less than 1,500 population were represented in this event, and O. E. Nonn, zone manager, and E. W. Berger, assistant manager, were in charge. Estimates that 150 cars would be taken were exceeded more than 40 per cent. by the actual orders, indicating upturn in auto distribution in the territory.

### OLDS EMPLOYEES RETURN TO JOBS AFTER VACATION

**Lansing, Mich.,** Aug. 6.—Employees of the Olds Motor Works were back at work this week following the two weeks' vacation period granted the majority of plant workers.

## *New Commercial Car Registrations, First Quarter, 1931*

| Months | Autocar | Brockway-Indiana | Chevrolet | Dia-mond-T | Dodge | Essex | FWD | Fargo | Federal | Ford | G. M. C. | Inter-national | Mack | Paige | Relay | Reo | Republic | Rugby | Sterling | Stewart | Studebaker | Whippet | White | Willys | Willys-Knight | Miscel-laneous | Totals | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 223 | 153 | 7566 | 167 | 1178 | 30 | 18 | 31 | 111 | 11308 | 444 | 1324 | 225 | 27 | 13 | 273 | 18 | 32 | 62 | 84 | 273 | 38 | 222 | 98 | 21 | 475 | 24414 | January |
| February | 177 | 108 | 7457 | 135 | 1129 | 6 | 18 | 36 | 100 | 10868 | 385 | 1368 | 185 | 20 | 28 | 261 | 22 | 30 | 47 | 85 | 268 | 23 | 204 | 140 | 21 | 354 | 23475 | February |
| March | 121 | 150 | 9396 | 144 | 1359 | 13 | 15 | 28 | 123 | 14728 | 454 | 1880 | 287 | 29 | 18 | 308 | 26 | 29 | 57 | 119 | 361 | 37 | 207 | 226 | 20 | 474 | 30609 | March |
| 1st Qr. Tl. | 521 | 411 | 24419 | 446 | 3666 | 49 | 51 | 95 | 334 | 36904 | 1283 | 4572 | 697 | 76 | 59 | 842 | 66 | 91 | 166 | 288 | 902 | 98 | 633 | 464 | 62 | 1303 | 78498 | 1st Qr. Tls |

## *New Commercial Car Registrations, First Quarter, 1930*

| Months | Autocar | Brockway-Indiana | Chevrolet | Diamond-T | Dodge | Essex | FWD | Fargo | Federal | Ford | G. M. C. | Inter-national | Mack | Paige | Relay | Reo | Republic | Rugby | Sterling | Stewart | Studebaker | Whippet | White | Willys | Willys-Knight | Miscel-laneous | Totals | Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| January | 157 | 248 | 8751 | 251 | 1606 | 50 | 37 | 186 | 169 | 13220 | 727 | 1836 | 344 | * | 25 | 698 | 28 | 83 | 145 | 95 | 100 | 241 | 411 | 130 | 62 | 631 | 30231 | January |
| February | 135 | 235 | 10327 | 207 | 1267 | 58 | 18 | 152 | 162 | 14198 | 535 | 1927 | 298 | * | 26 | 565 | 31 | 67 | 74 | 155 | 86 | 220 | 318 | 160 | 44 | 581 | 31846 | February |
| March | 195 | 384 | 13011 | 264 | 1595 | 65 | 15 | 156 | 228 | 19546 | 936 | 2364 | 452 | 52 | 46 | 682 | 43 | 59 | 106 | 265 | 99 | 223 | 408 | 246 | 88 | 660 | 42188 | March |
| 1st Qr. Tl | 487 | 867 | 32089 | 722 | 4468 | 173 | 70 | 494 | 559 | 46964 | 2198 | 6127 | 1094 | 52 | 97 | 1945 | 102 | 209 | 325 | 515 | 285 | 684 | 1137 | 536 | 194 | 1872 | 104265 | 1st Qr. Tl |

*Carried in the Miscellaneous Column.

## *Final Revision, Complete New Commerc'l Car Registra'n Statistics, March,' 31*

**Returns for today: Georgia**

**Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Some of this data has been published previously, but it is given here complete for the convenience of our subscribers. Commercial car registrations do not include buses. In this table 48 states and the District of Columbia.** **Comparative figures for March, 1930, will be found on Page 7.**

| States | Autocar | Brockway-Indiana | Chevrolet | Dia-mond-T | Dodge | Essex | FWD | Fargo | Federal | Ford | G. M. C. | Inter-national | Mack | Paige | Relay | Reo | Republic | Rugby | Sterling | Stewart | Studebaker | Whippet | White | Willys | Willys-Knight | Miscel-laneous | Totals | States |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alabama | | | 139 | | | | | | 1 | 123 | 1 | 10 | 1 | | | 1 | | | | | | 1 | | 1 | | | 278 | Alabama |
| Arizona | | | 44 | | 2 | | | | | 92 | 3 | 8 | | | | 1 | | | | | 3 | | | | | | 153 | Arizona |
| Arkansas | | | 80 | | 8 | | | | | 136 | 1 | 10 | | | | | | | | | | | 1 | | | | 236 | Arkansas |
| California | 5 | | 406 | 2 | 97 | | | | 8 | 1309 | 29 | 43 | 9 | 2 | | 32 | | 10 | 17 | 4 | 23 | | 13 | 7 | 7 | 72 | 2095 | Calif. |
| Colorado | | | 96 | | 10 | | | | | 179 | 14 | 8 | | | | 4 | | 1 | | | 7 | | | 8 | | | 327 | Colorado |
| Conn. | 3 | 2 | 117 | 5 | 29 | | | | 4 | 222 | 5 | 24 | 19 | | | 11 | | | | 5 | 9 | | 5 | 4 | | 5 | 469 | Conn. |
| Delaware | 1 | | 36 | | 2 | | | | | 53 | 2 | 9 | 2 | | | 2 | | | | | 1 | | | | | | 108 | Delaware |
| Florida | | 2 | 125 | | 11 | | | | 2 | 217 | 4 | 11 | 2 | | | | | | | | 1 | | 4 | | | 2 | 381 | Florida |
| Georgia | 2 | 4 | 258 | | 12 | | | | 2 | 345 | 3 | 19 | 1 | 1 | | 2 | 1 | 1 | | | | | 4 | 2 | | 2 | 659 | Georgia |
| Idaho | | | 28 | | 5 | | | | | 87 | 2 | 7 | | | | 2 | | | | | | | | 6 | | 2 | 139 | Idaho |
| Illinois | 3 | 6 | 470 | 23 | 63 | 1 | | 4 | 9 | 655 | 28 | 130 | 3 | 2 | | 12 | 1 | 2 | 7 | | 22 | 6 | 7 | 9 | 1 | 38 | 1502 | Illinois |
| Indiana | | 5 | 417 | 2 | 52 | 1 | | 1 | 2 | 450 | 14 | 95 | | | | 4 | | | | 9 | 13 | 3 | 3 | 13 | 2 | 9 | 1095 | Indiana |
| Iowa | | 1 | 336 | 4 | 31 | 1 | | 1 | | 334 | 2 | 79 | 6 | | | 9 | | | | | 13 | | 1 | 6 | | 5 | 829 | Iowa |
| Kansas | | | 183 | 2 | 18 | | 3 | | | 166 | 6 | 40 | | 1 | | 3 | 2 | | | | 11 | | | 5 | | 4 | 444 | Kansas |
| Kentucky | | | 104 | 1 | 18 | | | | 1 | 142 | 8 | 21 | 11 | 1 | | 3 | | | | | 6 | | 1 | 1 | | 2 | 320 | Kentucky |
| Louisiana | | | 120 | | 4 | | | | | 170 | 3 | 41 | 5 | | | | | | | | | | 4 | | 1 | 1 | 349 | Louisiana |
| Maine | | | 158 | | 19 | | | | | 244 | 1 | 14 | | | | 5 | | | | 1 | 7 | | 1 | | | | 450 | Maine |
| Maryland | 12 | | 150 | 6 | 15 | | | 1 | 5 | 192 | 7 | 29 | 8 | 2 | | 5 | | | | 1 | 4 | | 2 | 4 | 2 | 5 | 450 | Maryland |
| Mass'setts | 20 | 11 | 239 | 1 | 69 | | | | 7 | 752 | 35 | 59 | 12 | 1 | 1 | 24 | | 1 | 7 | 6 | 10 | | 9 | 4 | | 17 | 1285 | Mass. |
| Michigan | | | 265 | 2 | 39 | 1 | | | 8 | 625 | 12 | 47 | 3 | 4 | 1 | 13 | 5 | | | 2 | 4 | | 5 | 6 | | 11 | 1053 | Michigan |
| Minn. | | | 437 | 7 | 58 | | 3 | 2 | 3 | 527 | 14 | 104 | 1 | | 3 | 16 | 2 | 1 | | | 20 | 2 | 4 | 19 | 4 | 3 | 1230 | Minn. |
| Miss. | | 1 | 86 | | 2 | | | | | 77 | 1 | 12 | | | | | | | | | 1 | | | | | | 180 | Mississip. |
| Missouri | 2 | 9 | 655 | 29 | 77 | 2 | 2 | 3 | 7 | 609 | 22 | 111 | 6 | 2 | | 10 | 3 | 3 | 4 | 1 | 15 | 3 | 3 | 8 | | 9 | 1595 | Missouri |
| Montana | | | 78 | | 8 | | | 1 | | 76 | 1 | 28 | 2 | | | 4 | | | | | 4 | 1 | 2 | 3 | | 1 | 209 | Montana |
| Nebraska | | | 137 | | 25 | | | | | 211 | 7 | 32 | 2 | 1 | | 1 | | | | | 8 | 2 | 2 | 4 | | 4 | 436 | Nebraska |
| Nevada | | 1 | 11 | | 2 | | | | | 52 | 1 | 3 | | | | | | | | | 1 | | 1 | | | 3 | 75 | Nevada |
| N. Hamp. | | 1 | 86 | 1 | 8 | | | | | 103 | 2 | 6 | 3 | | | 6 | | | | 5 | 3 | | | | | | 224 | New Hamp |
| N. Jersey | 8 | 7 | 283 | 9 | 54 | | | | 5 | 546 | 30 | 42 | 14 | 1 | | 7 | 2 | 2 | 2 | 4 | 13 | 1 | 15 | 5 | 1 | 31 | 1082 | N. Jersey |
| N. Mexico | | | 29 | 2 | 4 | | | | | 62 | 1 | 11 | | | | 1 | | | | | | | | | | 1 | 111 | N. Mexico |
| New York | 28 | 55 | 774 | 29 | 177 | | 2 | 8 | 15 | 1526 | 62 | 181 | 109 | 6 | 5 | 36 | 3 | 3 | 8 | 47 | 37 | 1 | 42 | 20 | 1 | 98 | 3273 | New York |
| North Car. | | 1 | 219 | | 23 | | | | | 247 | 7 | 19 | 1 | | | 1 | | | | | | | 4 | 2 | | 9 | 533 | North Car. |
| Nor. Dak. | | 3 | 48 | 1 | 5 | | | | | 47 | 2 | 28 | | | | | | | | | 2 | | | 2 | | | 138 | North Dak. |
| Ohio | 4 | 11 | 319 | | 48 | | | 2 | 6 | 557 | 20 | 96 | 7 | | 1 | 14 | | 1 | 6 | 14 | 19 | 2 | 8 | 26 | | 33 | 1194 | Ohio |
| Okla. | | | 116 | 2 | 16 | | | | 2 | 176 | 3 | 26 | 1 | | | | | | | | 1 | 2 | 3 | 1 | | 1 | 350 | Okla. |
| Oregon | | | 48 | | 8 | | | 1 | 2 | 120 | 2 | 12 | 8 | | | 3 | | | 2 | | 3 | | 2 | 1 | | 6 | 218 | Oregon |
| Penna. | 25 | 17 | 542 | 2 | 145 | 4 | | 1 | 13 | 960 | 27 | 108 | 35 | 2 | 3 | 28 | 3 | | 2 | 15 | 22 | 6 | 24 | 17 | 1 | 23 | 2025 | Penna. |
| Rhode Isl. | 2 | 4 | 30 | 1 | 14 | | | | 7 | 112 | 4 | 2 | 1 | | | 10 | | | | | 6 | | | 1 | | 1 | 195 | Rhode Isl. |
| So. Car. | | | 103 | | 14 | | | | | 112 | 1 | 5 | | | | 2 | | | | | | | 1 | | | 5 | 243 | S. Carolina |
| [illegible] Dakota | | | 65 | 1 | 9 | | | | | 59 | 3 | 26 | 2 | | | 2 | | 1 | | | 9 | | | | | | 177 | S. Dakota |
| [illegible]enn. | | 2 | 90 | | 8 | | | | | 57 | 2 | 12 | 1 | | | 1 | | | | | 2 | | | | | | 175 | Tennessee |
| [illegible]xas | | | 540 | | 37 | | | 1 | 6 | 640 | 7 | 150 | 3 | | | 5 | | | | 1 | 11 | 3 | 15 | | | 23 | 1442 | Texas |
| [illegible]h | | | 77 | | 10 | | | | | 124 | 9 | 7 | 4 | | | 3 | | | | | 4 | 1 | 2 | | | 4 | 245 | Utah |
| [illegible]mont | | | 39 | | 7 | | | | | 43 | | 7 | | | | 3 | | | | | | | | 3 | | | 102 | Vermont |
| [illegible]nia | 3 | 5 | 215 | | 21 | 1 | | | | 242 | 12 | 33 | 2 | | 2 | | 3 | | | 1 | 2 | | 11 | 2 | | 17 | 572 | Virginia |
| [illegible]ton | | | 100 | | 27 | 2 | | 1 | 4 | 254 | 5 | 17 | 2 | 1 | 1 | 4 | | 1 | | | 13 | | 2 | | | 13 | 447 | Wash'ton |
| [illegible]a. | | | 77 | 6 | 15 | | | | | 109 | 6 | 21 | | 1 | | | | | | | 7 | | 1 | 5 | | | 248 | W. Virginia |
| [illegible]n | | 2 | 341 | 5 | 26 | | 5 | 1 | 4 | 433 | 17 | 56 | | 1 | | 13 | | 2 | 2 | 3 | 19 | 2 | 2 | 28 | | 11 | 973 | Wisconsin |
| | | | 46 | | 5 | | | | | 61 | 2 | 10 | | | | 4 | | | | | 3 | 1 | 2 | 3 | | 1 | 138 | Wyoming |
| | 3 | | 34 | 1 | 2 | | | | | 93 | 4 | 11 | 1 | | 1 | 1 | 1 | | | | 2 | | 1 | | | 2 | 157 | Dis. of Col. |
| | 121 | 150 | 9396 | 144 | 1359 | 13 | 15 | 28 | 123 | 14728 | 454 | 1880 | 287 | 29 | 18 | 308 | 26 | 29 | 57 | 119 | 361 | 37 | 207 | 226 | 20 | 474 | 30609 | Totals |

# Increasing Profits From Bakery Deliveries

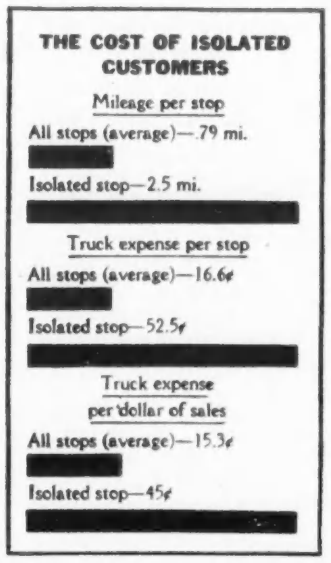
**This report on economical truck operation in the bakery field was prepared by the General Motors Truck Company, Pontiac, Mich., and appears in serial form in Automotive Daily News. Copies of this report in pamphlet form are now available at all General Motors Truck Company dealer and distributorships.**

IN many cases, lack of profit on a bakery route is due solely to the fact that the truck is making deliveries to one or more isolated customers whose business is highly unprofitable because of the distance the truck must travel in serving the customer. Instances frequently were observed during the survey where trucks made trips two to three miles long to deliver to a small customer located in a corner of a route.

A striking example of this sort was observed on a route of an eastern baker. This route, which was covered twice a day by the truck, included thirty-nine stops. The distance covered averaged 31 miles per trip, and the cost for truck and salesman averaged 21 cents per mile. Of the thirty-nine stops, thirty-eight were located within nine miles of the store. One customer, however, was located 1¼ miles farther out than the farthest of the remaining customers.

The high cost of serving this one isolated customer, which made his business distinctly unprofitable to the baker, is shown in the accompanying chart.

Other unprofitable customers are unprofitable solely because their location requires extra truck and driver time, even though they may not be isolated. For example, a Minnesota baker was found to have five customers just beyond the city limits, all of them requiring travel on unpaved roads. Fully five months out of the year these roads were almost impassible or were in such condition as to require slow, arduous driving. Trucks frequently were stuck and deliveries to those customers required an average of 21 minutes each throughout the year, as against an average of 6½ minutes for other customers on the route.




Again, a customer may be unprofitable because his total volume of orders does not justify the expense of delivery. For example, if the isolated customer in a foregoing illustration had been ordering approximately three to four times as much baked goods as were other customers on the route, the expense of delivering to him might have been justified. The small order buyer can only be profitable when the distance traveled, and time consumed in his delivery, is proportionately small.

The remedy for each of these situations is obvious. Sales effort must be concentrated on getting a maximum volume of business out of a limited area. And that means concentrating maximum sales activity and effort on these three goals:

1—Toward increasing the unprofitable customer's volume of sales to the point that it pays for the truck time and mileage required to serve him.

2—Toward planning routes to reduce the time and mileage required to serve the unprofitable customer.

3—Toward obtaining new, profitable customers near to unprofitable customers, in order to reduce the time and mileage devoted solely to serving the unprofitable customer.

(TO BE CONTINUED)

## LARGER INTERNATIONAL FARMALL TRACTOR OUT

**Chicago, Aug. 6.**—Regular production has been started by the International Harvester Company of a new and larger model Farmall tractor, it was made known today. The tractor is being built at the company's Rock Island plant.

It is stated that the output will be on a limited schedule, involving no increase in the number of workers or hours per week of operation.

WISCONSIN AXLES
have a notable record for sturdy efficiency, for lack of troubles, in every type of commercial service.
WISCONSIN AXLE CO.
Oshkosh, Wisconsin

BROCKWAY-INDIANA'S
Reputation Assures Their Structural Excellence
Dedicated to our policy of building motor trucks on sound engineering principles of basic design, yet permitting of a flexibility of construction whereby without price penalty trucks are exactly matched to the carefully analyzed haulage problems of any industry rather than trying to fit the problem to the limitations of the truck.
*"Dollar For Dollar We Challenge Truck Buyers to Equal Brockway-Indiana Values."*
BROCKWAY MOTOR TRUCK CORP.
*General Offices:*
Cortland - - - - New York

## *Complete New Commercial Car Registration Statistics, March, 1930*

**This table is repeated for comparative purposes only. March, 1931, figures will be found on Page 6.**

| States | Autocar | Brockway-Indiana | Chevrolet | Diamond-T | Dodge | Essex | FWD | Fargo | Federal | Ford | G. M. C | International | Mack | Paige | Relay | Reo | Republic | Rugby | Sterling | Stewart | Studebaker | Whippet | White | Willys | Willys-Knight | Miscellaneous | Totals | States |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ala., 1930 | | | 230 | | 2 | | | | | 215 | 3 | 18 | 2 | | | 1 | | | | | 1 | | 1 | | | | 473 | Ala., 1930 |
| Ariz., 1930 | | | 62 | | 10 | | | 2 | | 131 | 3 | 2 | | 1 | | 4 | | 2 | | 2 | 1 | 1 | 1 | 2 | 1 | | 225 | Ariz., 1930 |
| Ark., '30 | | | 118 | | 9 | | | | | 149 | 9 | 26 | 2 | 1 | | 2 | | 1 | | | | | 5 | 2 | | | 324 | Ark., 1930 |
| Cal., 1930 | 16 | | 489 | 2 | 121 | 2 | 1 | 6 | 17 | 1366 | 43 | 43 | 21 | 3 | | 62 | 3 | 6 | 16 | 2 | 8 | 3 | 27 | 4 | 7 | 127 | 2395 | Cal., 1930 |
| Col., 1930 | | 1 | 98 | | 9 | | 3 | 5 | 1 | 231 | 7 | 14 | | 1 | | 8 | | 2 | | | | | 4 | 9 | | 7 | 400 | Colo., 1930 |
| Conn., '30 | 8 | 4 | 108 | 5 | 43 | 4 | | 5 | 8 | 253 | 14 | 31 | 17 | 3 | 2 | 23 | 1 | | 1 | 9 | 4 | | 9 | 2 | 1 | 12 | 567 | Conn., '30 |
| Del., 1930 | 9 | 4 | 47 | | 3 | | | | | 60 | 8 | 6 | 2 | | | 1 | | | | 2 | | | | | | | 142 | Del., 1930 |
| Fla., 1930 | 1 | 5 | 123 | | 6 | | | | | 276 | 7 | 10 | 3 | | | 6 | | | | | | 2 | 4 | 1 | | | 444 | Fla., '30 |
| Ga., '30 | | 5 | 192 | | 12 | 1 | | | | 292 | 4 | 23 | 4 | | | 1 | | 1 | | | 2 | 2 | 4 | 1 | 1 | | 545 | Ga., 1930 |
| Idaho, '30 | | | 50 | | 4 | | 3 | | | 94 | | 6 | 8 | | | 2 | | 2 | | | | | 1 | 1 | | | 171 | Idaho, '30 |
| Ill., 1930 | 5 | 9 | 723 | 77 | 71 | 1 | | 9 | 16 | 944 | 61 | 218 | 24 | 2 | 5 | 35 | 2 | | 15 | 6 | | 21 | 25 | | 22 | 95 | 2386 | Ill., 1930 |
| Ind., 1930 | | 15 | 604 | 13 | 47 | 1 | | 3 | 5 | 817 | 36 | 113 | | 2 | 7 | 32 | | 1 | | 16 | 3 | 9 | 7 | 13 | 3 | 10 | 1757 | Ind., 1930 |
| Iowa, '30 | | | 458 | 6 | 24 | | 1 | 1 | 1 | 401 | 14 | 115 | 2 | | | 12 | 1 | 1 | | | 2 | 4 | 5 | 16 | 5 | 7 | 1076 | Iowa, 1930 |
| Kan., '30 | | 2 | 274 | 2 | 21 | 1 | | 4 | | 276 | 5 | 40 | 1 | 1 | | 2 | 1 | 1 | | 2 | 2 | 4 | 2 | 12 | 3 | 2 | 658 | Kan., 1930 |
| Ky., 1930 | | 6 | 166 | 2 | 14 | 2 | | 3 | | 202 | 14 | 46 | 2 | | | 4 | 1 | | | | 2 | | 9 | 2 | 1 | 10 | 486 | Ky., 1930 |
| La., 1930 | | | 170 | | 24 | | | | | 223 | 4 | 30 | 2 | | | 3 | | | | | | | 1 | 3 | 1 | | 461 | La., 1930 |
| Me., 1930 | 1 | 9 | 170 | 1 | 19 | 2 | | | | 167 | | 8 | 1 | 1 | | 7 | | | | | | 1 | 2 | 1 | 1 | | 391 | Maine, '30 |
| Md., '30 | 9 | 13 | 221 | 12 | 26 | 2 | | 3 | 14 | 356 | 21 | 44 | 15 | 1 | | 20 | 2 | 1 | 2 | 6 | 7 | 3 | 14 | 2 | | 15 | 809 | Md., '30 |
| Mass., '30 | 30 | 16 | 266 | 12 | 88 | 9 | 1 | 10 | 16 | 663 | 38 | 66 | 35 | 2 | | 41 | 1 | 1 | 8 | 13 | 5 | 2 | 11 | 3 | 2 | 9 | 1348 | Mass., '30 |
| Mich., '30 | 1 | 2 | 418 | 4 | 60 | 4 | | 3 | 19 | 1022 | 49 | 59 | 13 | 2 | | 22 | 4 | 2 | | | 2 | 4 | 4 | 6 | 1 | 16 | 1717 | Mich., '30 |
| Minn., '30 | | 2 | 291 | 4 | 31 | | 1 | 3 | 3 | 422 | 11 | 70 | | | 1 | 18 | | 2 | | | 2 | 4 | 6 | 8 | 4 | 6 | 889 | Minn., '30 |
| Miss., '30 | | | 242 | | 13 | | | | | 261 | 10 | 26 | 3 | | | 1 | | 1 | | | | 4 | 3 | 1 | | | 565 | Miss., 1930 |
| Mo., 1930 | 9 | 23 | 1111 | 24 | 120 | 1 | | 12 | 16 | 1228 | 47 | 208 | 5 | 8 | 1 | 30 | 6 | 4 | 1 | 8 | 11 | 43 | 9 | 38 | 5 | 43 | 3011 | Mo., 1930 |
| Mont., '30 | | | 98 | | 3 | | | 3 | 1 | 135 | 5 | 43 | 1 | | | 4 | | 2 | | | | 6 | 1 | 6 | | 1 | 309 | Mont., '30 |
| Neb., 1930 | | | 228 | 2 | 14 | | | 1 | | 263 | 8 | 39 | | | | 1 | | 1 | | 1 | | 6 | | 11 | 1 | 2 | 578 | Neb., 1930 |
| Nev., 1930 | | | 11 | | 20 | | | | | 45 | 5 | 1 | 4 | | | 1 | | 1 | 2 | | | | | | | 1 | 91 | Nev., 1930 |
| N. H., '30 | | 5 | 65 | | 5 | | | | | 91 | 1 | 8 | 2 | | | 6 | | | | 2 | | | | | | 1 | 186 | N. H., 1930 |
| N. J., 1930 | 3 | 31 | 367 | 6 | 60 | 2 | | 8 | 8 | 675 | 34 | 46 | 83 | 3 | 2 | 28 | 1 | 1 | 11 | 5 | 10 | 4 | 14 | | 7 | 39 | 1448 | N. J., 1930 |
| N. M., '30 | | | 67 | | 9 | | | 1 | | 62 | 2 | 1 | | | | | | | | | | | 3 | 2 | | | 147 | N. M., 1930 |
| N. Y., '30 | 28 | 134 | 851 | 47 | 150 | 10 | 2 | 12 | 22 | 1750 | 167 | 130 | 85 | 5 | 3 | 80 | 1 | 4 | 24 | 106 | 10 | 16 | 75 | 18 | 3 | 68 | 3801 | N. Y., 1930 |
| N. C., '30 | 8 | 1 | 240 | | 23 | 1 | | | | 239 | 4 | 47 | 2 | | | 9 | | | | | 1 | 1 | 11 | 1 | | 1 | 589 | N. C., '30 |
| N. D., '30 | | | 68 | 3 | 5 | | | 4 | | 80 | 2 | 34 | | | | 1 | | 1 | | | | 2 | | 5 | | 1 | 206 | N. D., 1930 |
| Ohio, 30 | 6 | 16 | 493 | 5 | 57 | 3 | | 9 | 9 | 856 | 59 | 109 | 5 | | 2 | 32 | 4 | 4 | 4 | 9 | 1 | 25 | 50 | 10 | 8 | 37 | 1813 | Ohio, '30 |
| Okla., '30 | 7 | 3 | 329 | 4 | 41 | 1 | | 4 | 4 | 333 | 30 | 49 | 8 | 1 | 1 | 4 | | | | | 1 | 8 | 5 | 10 | 1 | 6 | 850 | Okla., '30 |
| Ore., '30 | 3 | | 117 | | 9 | | | 1 | 3 | 211 | 6 | 14 | 4 | | | 9 | | 2 | | | 1 | 1 | | | | 6 | 387 | Ore., 1930 |
| Pa., 1930 | 41 | 37 | 725 | 15 | 174 | 13 | | 14 | 20 | 1421 | 63 | 171 | 65 | 11 | 18 | 52 | 6 | 4 | 17 | 63 | 13 | 19 | 32 | 6 | 2 | 42 | 3044 | Penn., '30 |
| R. I., '30 | 5 | 3 | 72 | | 15 | | | | 4 | 93 | 9 | 8 | 5 | | 1 | 8 | | | 1 | | 2 | 2 | 8 | 1 | | | 237 | R. I., 1930 |
| S. C., '30 | | | 129 | | 9 | | | 1 | | 121 | 4 | 3 | 1 | | | 1 | 1 | | | | | 1 | 2 | | | | 273 | S. C., 193 |
| S. D., '30 | | | 132 | | 10 | | 1 | 2 | 1 | 123 | 4 | 65 | 6 | | | 12 | | 1 | | | | 2 | | 6 | 2 | 3 | 370 | S. D., '30 |
| Tenn., '30 | | | 107 | | 18 | | | | 6 | 136 | 13 | 27 | 5 | | | 2 | 2 | | | 1 | 2 | 1 | 2 | | | | 322 | Tenn., '30 |
| Texas, '30 | | 7 | 782 | | 35 | 3 | | 9 | 3 | 889 | 21 | 132 | 3 | 3 | 1 | 19 | | | | 1 | 2 | 5 | 17 | 12 | 1 | 5 | 1950 | Texas, '30 |
| Utah, '30 | | | 75 | | 7 | | | | | 119 | 7 | 11 | | | | 8 | | 2 | | | | 1 | 2 | | | 2 | 234 | Utah, '30 |
| Vt., 1930 | | | 29 | 2 | 10 | | | 1 | | 92 | | 11 | | | | 5 | | | | | | | | 4 | | | 154 | Vt., 1930 |
| Va., '30 | 5 | 21 | 540 | | 37 | | | 1 | 9 | 506 | 16 | 41 | 2 | | | 13 | 6 | | | 3 | | 2 | 12 | 5 | | 15 | 1234 | Va., '30 |
| Wash., '30 | | | 189 | | 37 | | | 7 | 5 | 399 | 22 | 33 | 9 | | | 8 | | 7 | 1 | | 2 | 2 | 14 | 1 | | 42 | 778 | Wash., '30 |
| W. V., '30 | | 5 | 128 | 3 | 20 | 1 | | 3 | | 195 | 17 | 32 | | | 1 | 10 | | | | 1 | | | 1 | 2 | 2 | 3 | 424 | W. Va., '30 |
| Wis., 1930 | | 4 | 482 | 11 | 36 | 1 | 2 | 5 | 14 | 543 | 22 | 80 | | 1 | | 24 | | 1 | 3 | 7 | 2 | 12 | 4 | 18 | 2 | 24 | 1298 | Wis., 1930 |
| Wyo., '30 | | | 22 | | 8 | | | 1 | | 57 | | 4 | | | | | | | | | | | | 1 | 1 | | 94 | Wyo., 1930 |
| D. C., '30 | | 1 | 34 | 2 | 6 | | | | 3 | 63 | 7 | 3 | | | 1 | 8 | | | | | | | 1 | | | 2 | 131 | D. C., 1930 |
| Totals | 195 | 384 | 13011 | 264 | 1595 | 65 | 15 | 156 | 228 | 19546 | 936 | 2364 | 452 | 52 | 46 | 682 | 43 | 59 | 106 | 265 | 99 | 223 | 408 | 246 | 88 | 660 | 42188 | Totals |

# Major Specifications and Mechanical Details of 1931 Commercial Cars

| Make and Model | Capacity—Tons or Lbs. | Chassis Price | Engine | Valve Arr'g'm't | No. of Cyls. | Bore and Stroke | Piston Disp. | Tax H. P. | Max. Brake H. P. and Peak R. P. M. | Type Cam-shaft Drive | Radiator Make | Clutch Make | Universals Make | Steering Gear Make | Carburetor Make | Fuel Feed Type | Make Electr'l System | Make Transmission | No. Spds. For. | Rear Axle Make | Rear Axle Type | Final Gear Reduction | Type Service Brakes | Area Service Brakes | Standard Wheel Base | Chassis Wgt. | Standard Tire Sizes Front | Standard Tire Sizes Rear |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *Am La France Chief | 2½ | 3650 | Own | L | 6 | 3¾x5 | 331.0 | 33.7 | 65@2100 | G | G & O | Borg | Spic | Ross | Str | Vac | DR | Own | 4 | Tim | Wo | 31.2 | B4IMV | — | 156 | 6200 | 32x6 | 32x6 |
| *Am. La France Chieftain | 3-4 | 6725 | Own | L | 6 | 4½x6 | 411.0 | 40.8 | 85@1800 | G | G & O | Borg | Spic | Ross | Zen | Vac | DR | Own | 4 | Tim | Wo | 28.8 | B4IMV | — | 175 | 7200 | 36x8S | 36x8 |
| Am. La France Big Chief | 6 | 5500 | Own | L | 6 | 4½x5½ | 572 | 48.6 | 115@1600 | — | — | — | Own | — | Ross | Zen | Vac | DR | Own | 4 | Own | 2 R | 32.8 | W4IA | — | 226 | 10600 | 40x8S | 40x8S |
| Austin | 400 | 475 | Own | L | 4 | 2.2x3 | 45.6 | 7.8 | 13@3000 | G | Hex | Rock | Spic | Own | Til | Gra | Aut | W-G | 3 | Sal | Sp | 5.25 | O4M | 76.5 | 75 | 1210 | 3.75x18 | 3.75x18 |
| Autocar A | 1½-2 | 3200 | Own | L | 6 | 4 x4¾ | 358.0 | 38.4 | 82@2400 | G | Per | Long | Spic | Ross | Str | Vac | DR | Br-L | 4 | Own | Sp | 27.9 | LO4ID | 460 | 150 | 5060 | 34x7 | 34x7 |
| Autocar D | 2-2½ | 3500 | Own | L | 6 | 4 x4¾ | 358.0 | 38.4 | 82@2400 | G | Per | Long | Spic | Ross | Str | Vac | DR | Br-L | 4 | Own | 2 R | 33.5 | LO4ID | 460 | 150 | 5300 | 34x7 | 34x7D |
| †Autocar SH | 2½-3 | 4300 | Own | L | 6 | 4½x4¾ | 404.0 | 43.4 | 92@2400 | G | Own | Long | Spic | Ross | Str | Gra | DR | Own | 4 | Own | 2 R | 44.0 | O2IM | 328 | 114 | 6770 | 34x7 | 34x7D |
| Autocar SCH | 2½-3 | 4300 | Own | L | 6 | 4½x4¾ | 404.0 | 43.4 | 92@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 4 | Own | 2 R | 44.0 | O2IM | 328 | 157 | 6860 | 34x7 | 34x7D |
| †Autocar H | 3 | 4100 | Own | L | 4 | 4½x5½ | 350.0 | 32.4 | 45@1450 | G | Own | Long | Spic | Ross | Str | Gra | DR | Own | 4 | Own | 2 R | 48.6 | O2IM | 328 | 114 | 6770 | 34x7 | 34x7D |
| †Autocar HS | 3½ | 4600 | Own | L | 4 | 4½x5½ | 350.0 | 32.4 | 45@1450 | G | Own | Long | Spic | Ross | Str | Gra | DR | Own | 4 | Own | 2 R | 54.3 | O2IM | 516 | 114 | 7900 | 40x8 | 40x8D |
| †Autocar SHS | 3-3½ | 4800 | Own | L | 6 | 4¼x4¾ | 404.0 | 43.4 | 92@2400 | G | Own | Long | Spic | Ross | Str | Gra | DR | Own | 4 | Own | 2 R | 54.3 | O2IM | 516 | 114 | 7900 | 40x8 | 40x8D |
| Autocar SCHS | 3-3½ | 4800 | Own | L | 6 | 4¼x4¾ | 404.0 | 43.4 | 92@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 4 | Own | 2 R | 54.3 | O2IM | 516 | 157 | 8180 | 40x8 | 40x8D |
| Autocar N | 3-3½ | 4800 | Own | L | 6 | 4¼x4¾ | 404.0 | 43.4 | 92@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 4 | Own | 2 R | 41.2 | OL4IH | 574 | 174 | 7990 | 36x8 | 36x8D |
| Autocar TEA | 3-3½ | 5350 | Own | L | 6 | 4¼x4¾ | 404.0 | 43.4 | 92@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 12 | Own | 2 R | 101.1 | LO4ID | 602 | 192 | 8900 | 36x8 | 36x8D |
| Autocar TFA | 3½-5 | 6100 | Own | L | 6 | 4½x4¾ | 453.0 | 48.6 | 101@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 12 | Own | 2 R | 101.3 | LO4ID | 602 | 192 | 9300 | 38x9 | 38x9D |
| Autocar C | 3½-5 | 5500 | Own | L | 6 | 4½x4¾ | 453.0 | 48.6 | 101@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 4 | Own | 2 R | 51.7 | O2IM | 516 | 172 | 9500 | 42x9 | 42x9D |
| Autocar CE | 7½ | 6000 | Own | L | 6 | 4½x4¾ | 453.0 | 48.6 | 101@2400 | G | Own | Long | Spic | Ross | Str | Vac | DR | Own | 4 | Own | 2R | 51.7 | LO41V | 670 | 172 | 10500 | 36x7S | 40x8SD |
| Autocar F | 7½ | 6800 | Own | L | 6 | 4½x4¾ | 453.0 | 48.6 | 101@2400 | G | Own | Br-L | Spic | Ross | Str | Vac | DR | Br-L | 7 | Tim | Wo | 94.0 | LT4DV | 674 | 173 | 11000 | 36x7S | 40x8SD |
| *Autocar G | 10 | 9000 | Own | L | 6 | 4½x4¾ | 453.0 | 48.6 | 101@2400 | G | Own | Br-L | Spic | Ross | Str | Vac | DR | Br-L | 7 | Tim | Wo | 100.0 | T6IA | 720 | 171 | 13000 | 36x8 | 36x8D |
| Brockway 50 | *6000 | 995 | Con | L | 6 | 3⅜x4 | 214.7 | 27.3 | 61@3000 | C | G & O | Borg | Spic | Ross | Zen | P | Aut | W-G | 3 | Col | Sp | 19.8 | B4IM | 397 | 132 | *3290 | 30x5 | 30x5 |
| Brockway 65 | 6500 | 1195 | Con | L | 6 | 3⅜x4⅝ | 248.2 | 27.3 | 65@2700 | C | G & O | Borg | Spic | Ross | Zen | Vac | Aut | Br-L | 3 | Col | Sp | 21.3 | C4IM | 244 | 137 | 3400 | 30x5 | 30x5 |
| Brockway 75 | 7500 | 1290 | Con | L | 6 | 3⅜x4⅝ | 248.2 | 27.3 | 65@2700 | C | G & O | Borg | Spic | Ross | Zen | Vac | Aut | Br-L | 4 | Col | Sp | 25.6 | C4IM | 244 | 137 | 3450 | 32x6 | 32x6 |
| Brockway 90 | 9000 | 1525 | Con | L | 6 | 3⅜x4⅝ | 248.2 | 27.3 | 65@2700 | C | G & O | Borg | Spic | Ross | Zen | Vac | Aut | Br-L | 4 | Col | Sp | 20.9 | C4IM | 292 | 149 | 4050 | 32x6 | 32x6 |
| Brockway 120 | 12000 | 1990 | Con | H | 6 | 4 x4⅝ | 311.0 | 38.4 | 73@2400 | C | G & O | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Tim | Sp | 31.3 | L4IH | 353 | 156 | 5200 | 32x6 | 32x6D |
| Brockway 140 | 14000 | 2495 | Con | H | 6 | 4 x4⅝ | 311.0 | 38.4 | 73@2400 | C | G & O | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Wis | 2 R | 35.3 | L4IHV | 356 | 156 | 5500 | 32x6 | 32x6D |
| Brockway 141 | 17000 | 2935 | Con | H | 6 | 4 x4⅝ | 311.0 | 38.4 | 73@2400 | C | G & G | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Wis | 2 R | 46.2 | L4IHV | 356 | 170 | 6200 | 32x6 | 32x6D |
| Brockway 170 | 17000 | 3160 | Con | H | 6 | 4½x4¾ | 380.9 | 40.8 | 89@2400 | C | G & O | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Wis | 2 R | 46.6 | L4IHV | 380 | 170 | 6800 | 32x6 | 32x6D |
| Brockway 175 | 17500 | 3660 | Con | H | 6 | 4⅝x4¾ | 427.5 | 45.9 | 100@2400 | C | G & O | Spic | Ross | Zen | P | Aut | — | 5 | Wis | 2 R | 45.3 | L4IHV | 380 | 170 | 7200 | 34x7 | 34x7D |
| Brockway 195 | 19500 | 3820 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 89@2400 | C | G & O | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Wis | 2 R | 49.5 | L4IHV | 471 | 170 | 7500 | 34x7 | 34x7D |
| Brockway 190 | 19000 | 4185 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 89@2400 | C | Long | Borg | Spic | Ross | Zen | P | Aut | Br-L | 7 | Tim | Wo | 78.6 | T2IMV | 471 | 168½ | 7625 | 34x7 | 34x7D |
| Brockway 200 | 22000 | 4560 | Con | H | 6 | 4⅝x4¾ | 427.5 | 45.9 | 100@2400 | C | G & O | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Wis | 2 R | 50.7 | L4IHV | 546 | 170 | 8200 | 38x8 | 38x8D |
| Brockway 220 | 25000 | 5950 | Con | H | 6 | 4⅝x4¾ | 427.5 | 45.9 | 100@2400 | C | Long | Br-L | Spic | Ross | Zen | P | Aut | Br-L | 4 | Tim | Wo | 63.7 | LT4IVA | 664 | 182 | 10000 | 40x8 | 40x8D |
| Brockway 290 | 30000 | 7250 | Con | L | 6 | 4¾x5¾ | 611.4 | 54.1 | 116@1800 | C | Long | Br-L | Spic | Ross | Str | P | L-N | Br-L | 7 | Tim | Wo | 95.0 | T4IA | 676 | 182 | 10750 | 38x7P | 40x14S |
| *Brockway 640 | 40000 | 9700 | Con | L | 6 | 4⅞x5⅞ | 611.4 | 54.1 | 116@1800 | C | Long | Br-L | Spic | Ross | Str | P | L-N | Br-L | 7 | Tim | Wo | 90.9 | T4IA | 864 | 212 | 14000 | 38x7P | 38x10S |
| Chevrolet | ½ | 355 | Own | H | 6 | 3⅛x3¾ | 194.0 | 26.3 | 50@2600 | G | Har | Own | Own | Own | Car | P | DR | Own | 3 | Own | Sp | 13.6 | O4IM | 101 | 109 | *1880 | 19x4.75 | 19x4.75 |
| Chevrolet | 1½ | 590 | Own | H | 6 | 3⅛x3¾ | 194.0 | 26.3 | 50@2600 | G | Har | Own | Own | Own | Car | P | DR | Own | 4 | Own | Sp | 33.4 | O4IM | 170 | 157 | 3015 | 30x5 | 30x5D |
| Chevrolet | 1½ | 520 | Own | H | 6 | 3⅛x3¾ | 194.0 | 26.3 | 50@2600 | G | Har | Own | Own | Own | Car | P | DR | Own | 4 | Own | Sp | 33.4 | —— | — | 131 | 2700 | 30x5 | 32x6 |
| Commerce Series S 11 | 1 | 1600 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Col | Sp | 25.5 | L4IH | 297 | 142 | 3900 | 30x5P | 30x5P |
| Commerce Series S 11 | 1½ | 1900 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Sp | 29.2 | L4IH | 297 | 162 | 4180 | 30x5P | 30x5DP |
| Commerce Series 40 | 1½ | 2990 | Bud | L | 6 | 3⅝x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Wo | 34.8 | L4IH | 394 | 168 | 4700 | 34x5P | 34x5DP |
| Commerce Series S 11 | 2 | 2030 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Sp | 29.2 | L4IH | 297 | 162 | 4500 | 32x6P | 32x6D |
| Commerce Series 40 | 2 | 3240 | Bud | L | 6 | 3⅝x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Wo | 34.8 | L4IH | 394 | 168 | 4900 | 32x6 | 36x6D |
| Commerce Series 40 | 2½ | 3240 | Bud | L | 6 | 3⅝x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Wo | 34.8 | L4IH | 394 | 168 | 5100 | 36x6P | 36x6D |
| Commerce Series 60 | 2½ | 4580 | Bud | L | 6 | 4⅛x5½ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Tim | Wo | 63.0 | L4IH | 584 | 175 | 7000 | 36x6P | 36x6D |
| Commerce Series 60 | 3 | 4680 | Bud | L | 6 | 4⅛x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Tim | Wo | 63.0 | L4IH | 584 | 175 | 7100 | 36x8P | 38x7D |
| Commerce Series 80 | 3½ | 5250 | Bud | L | 6 | 4⅛x5½ | 411.0 | 40.8 | 83@2100 | G | Long | Own | Blo | Ross | Zen | Vac | Aut | Br-L | 7 | Tim | Wo | 98.2 | —— | — | 175 | 8200 | 36x6S | 36x6S |
| Commerce Series 80 | 4 | 5330 | Bud | L | 6 | 4⅛x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Own | Blo | Ross | Zen | Vac | Aut | Br-L | 7 | Tim | Wo | 98.2 | —— | — | 175 | 8400 | 36x6S | 36x14S |
| Commerce Series 100 | 5 | 5830 | Bud | L | 6 | 4⅛x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Own | Blo | Ross | Zen | Vac | Aut | Br-L | 7 | Tim | Wo | 95.0 | —— | — | 175 | 9600 | 36x6S | 40x14S |
| Day Elder 60 | 1 | 1095 | Con | L | 6 | 3⅜x4 | 214.7 | 27.3 | 61@3000 | C | G & O | Borg | Spic | Ross | Zen | P | DR | W-G | 4 | Tim | Sp | 36.3 | B4IM | 241 | 135 | *3200 | 20x6.00B | 20x6.50B |
| Day Elder 85 | 1½ | 1645 | Con | L | 6 | 3⅜x4⅝ | 248.3 | 27.3 | 65@2700 | C | Per | Borg | Spic | Ross | Zen | P | DR | W-G | 4 | Tim | Sp | 42.3 | L4IH | 229 | 135 | 3750 | 20x6.00B | 20x6.50DB |
| Day Elder 110 | 2 | 2095 | Con | L | 6 | 3⅜x4⅝ | 248.3 | 27.3 | 65@2700 | C | Per | Br-L | Spic | Ross | Zen | P | DR | Br-L | 4 | Tim | Sp | 44.9 | L4IH | 306 | 156 | 4600 | 20x7.00B | 20x7.00DB |
| Day Elder 130 | 2½ | 2895 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 73@2400 | C | Per | Br-L | Spic | Ross | Zen | P | DR | Br-L | 4 | Tim | Sp | 40.7 | L4IH | 354 | 157 | 6400 | 20x7.50B | 20x7.50DB |
| Day Elder 160 | 3 | 3695 | Con | H | 6 | 4 x4½ | 339.3 | 38.4 | 82@2400 | C | Per | Br-L | Spic | Ross | Zen | P | DR | Br-L | 4 | Tim | Wo | 36.1 | L4IH | 398 | 156 | 6600 | 20x7.50B | 20x9.00DB |
| Day Elder 200 | 4 | 4295 | Con | H | 6 | 4 x4½ | 339.3 | 38.4 | 82@2400 | C | Per | Br-L | Spic | Ross | Zen | P | DR | Br-L | 4 | Tim | Wo | 43.5 | L4IHV | 489 | 156 | 7400 | 20x9.00B | 20x9.00DB |
| Day Elder 240 | 5 | 5500 | Con | H | 6 | 4⅜x4⅜ | 427.5 | 45.9 | 100@2600 | C | Per | Br-L | Blo | Ross | Zen | Vac | DR | Br-L | 4 | Tim | Wo | 50.8 | L4IHV | 520 | 162 | 9300 | 38x9P | 38x9DP |
| *Day Elder 285 | 8 | 6000 | Con | H | 6 | 4⅜x4⅝ | 427.5 | 45.9 | 100@2600 | C | Per | Br-L | Blo | Ross | Zen | Vac | DR | Br-L | 7 | Tim | Wo | 71.2 | L6IHV | 674 | 164 | 12000 | 20x8.25B | 20x8.25DB |
| *Day Elder 345 | 10 | 7500 | Con | H | 6 | 4⅜x4⅝ | 427.5 | 45.9 | 100@2600 | C | Per | Br-L | Blo | Ross | Zen | Vac | DR | Br-L | 7 | Tim | Wo | 79.9 | W6IA | 400 | 164 | 12500 | 20x9.00B | 20x9.00DB |
| *Day Elder 402 | 12 | 9000 | Con | L | 6 | 4½x5¾ | 611.4 | 54.2 | 127@2300 | G | Per | Br-L | Blo | Ross | Zen | P | DR | Br-L | 7 | Tim | Wo | 84.6 | W6IA | 490 | 164 | 14000 | 20x9.75B | 20x9.75DB |
| Diamond T 216 | 1½ | 695 | Her | L | 6 | 3¾x4¼ | 228.0 | 27.3 | 56@2400 | G | G & O | Borg | Spic | Ross | Zen | P | Aut | W-G | 4 | Cla | Sp | —— | L4IH | 252 | 135⅛ | 3130 | 20x6.50B | 20x6.50B |
| Diamond T 291 | 1½-2 | 1325 | Her | L | 6 | 3½x4½ | 268.0 | 29.4 | 60@2400 | G | G & O | Borg | Spic | Ross | Zen | P | Aut | Cov | 4 | Cla | Sp | —— | L4IH | 279 | 156¼ | 4500 | 20x6.50B | 20x6.50DB |
| Diamond T 303 | 2-2½ | 1585 | Her | L | 6 | 3¾x4½ | 298.0 | 33.7 | 67@2400 | G | G & O | Borg | Spic | Ross | Zen | P | Aut | Cov | 4 | Cla | Sp | —— | L4IHV | 350 | 159¾ | 5000 | 20x7.00B | 20x7.00DB |
| Diamond T 551 | 2½-3 | 2050 | Her | L | 6 | 4 x4½ | 339.0 | 38.4 | 74@2400 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Cov | 4 | Tim | Sp | —— | L4IHV | 408 | 168 | 5600 | 20x7.50B | 20x7.50DB |
| Diamond T 504 | 3 | 2375 | Her | L | 6 | 4 x4½ | 339.0 | 38.4 | 74@2400 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Cov | 4 | Wis | 2 R | —— | L4IHV | 408 | 176½ | 6400 | 20x8.25B | 20x8.25DB |
| Diamond T 506 | 3 | 2675 | Her | L | 6 | 4¼x4½ | 383.0 | 43.3 | 85@2200 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Cov | 5 | Wis | 2 R | —— | L4IHV | 408 | 184 | 6400 | 20x8.25B | 20x8.25DB |
| Diamond T 603 | 3-4 | 2975 | Her | L | 6 | 4⅜x4⅜ | 428.4 | 45.9 | 94@2200 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Cov | 5 | Wis | 2 R | —— | L4IHV | 499 | 169 | 7500 | 20x9.00B | 20x9.00DB |
| Diamond T 606 | 3-4 | 3075 | Her | L | 6 | 4½x4¾ | 453.0 | 48.6 | 100@2200 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Cov | 5 | Wis | 2 R | —— | L4IHV | 499 | 187½ | 7500 | 20x9.00B | 20x9.00DB |
| Diamond T 750 | 4-5 | 4100 | Her | L | 6 | 4⅜x5¼ | 529.0 | 51.3 | —— | G | G & O | Cov | Spic | Ross | Zen | P | Aut | W-G | 4 | Tim | Wo | —— | W4I | 552 | 178 | 8300 | 22x9.75B | 22x9.75DB |
| *Diamond T 801 | 4 | 4140 | Her | L | 6 | 4⅜x4⅜ | 428.4 | 45.9 | 94@2200 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Br-L | 7 | Own | Wo | —— | L6IHV | 571 | 189½ | 8300 | 36x8P | 36x8DP |
| *Diamond T 1290 | 6 | 5630 | Her | L | 6 | 4½x4⅜ | 453.3 | 48.6 | 100@2200 | G | G & O | Cov | Spic | Ross | Zen | P | Aut | Br-L | 7 | Tim | Wo | —— | T4IA | 238 | 190 | 11000 | 34x7P | 34x7DP |
| *Diamond T 1600 | 8 | 6220 | Her | L | 6 | 4⅝x4⅜ | 479.0 | 51.3 | 104@2400 | G | G & O | Cov | Spic-Blo | Ross | Zen | P | Aut | Br-L | 7 | Tim | Wo | —— | T4IA | 238 | 190 | 11700 | 36x8P | 36x8DP |
| *Diamond T 1691 | 8 | 7500 | Wak | L | 6 | 5 x5¾ | 677.4 | 60.0 | 127@2000 | G | G & O | Br-L | Spic-Blo | Ross | Zen | P | Aut | Br-L | 7 | Tim | Wo | —— | T4IA | 238 | 194 | 12500 | 36x8P | 36x8D |
| Dodge Bros. UF 10 | ½ | 435 | Own | L | 4 | 3⅜x4¼ | 196.0 | 21.0 | 48@2800 | G | Fed | Borg | Own | W-G | Car | P | DR | Own | 3 | Own | Sp | 14.2 | L4IH | 114 | 109 | *2050 | 19x5.00 | 19x5.00 |
| Dodge Bros. F 10 | ½ | 515 | Own | L | 6 | 3¼x4¼ | 211.5 | 25.3 | 66@3200 | C | Fed | Borg | Un | W-G | Car | P | DR | Own | 3 | Own | Sp | 14.2 | L4IH | 114 | 109 | 2100 | 19x5.25 | 19x5.25 |
| Dodge Bros. U 1 | ¾ | 490 | Own | L | 4 | 3⅜x4¼ | 196.0 | 21.0 | 45@2800 | G | Fed | Borg | Spic | Han | Car | Vac | NE | Own | 3 | Own | Sp | 21.6 | L4IH | 189 | 124 | 2260 | 20x6.00 | 20x6.00 |
| Dodge Bros. DA 1 | ¾ | 595 | Own | L | 6 | 3⅜x3⅞ | 208.0 | 27.3 | 63@3200 | C | Fed | Borg | Spic | Han | Zen | Vac | NE | Own | 4 | Own | Sp | 36.8 | L4IH | 189 | 124 | 2360 | 20x6.00 | 20x6.00 |
| Dodge Bros. | 1 | 495 | Own | L | 4 | 3⅜x4¼ | 196.0 | 21.0 | 45@2800 | G | Fed | Borg | Spic | Han | Car | Vac | NE | Own | 3 | Own | Sp | 36.1 | L4IH | 205 | 133 | 2590 | 20x6.00 | 32x6 |
| Dodge Bros. | 1 | 595 | Own | L | 6 | 3⅜x3⅞ | 208.0 | 27.3 | 63@3200 | C | Fed | Borg | Spic | Han | Zen | Vac | NE | Own | 3 | Own | Sp | 33.4 | L4IH | 205 | 133 | 2690 | 20x6.00 | 32x6 |
| Dodge Bros. UF 30 | 1½ | 595 | Own | L | 4 | 3⅜x4¾ | 196.0 | 21.0 | 48@2800 | G | Fed | Borg | Cle | W-G | Car | P | DR | Own | 4 | Own | Sp | 37.1 | L4IH | 120 | 136 | 2750 | 20x6.00 | 32x6 |
| Dodge Bros. UF 31 | 1½ | 670 | Own | L | 4 | 3⅜x4¾ | 196.0 | 21.0 | 48@2800 | G | Fed | Borg | Cle | W-G | Car | P | DR | Own | | Own | Sp | 32.1 | L4IH | 229 | 165 | 2925 | 20x6.00 | 32x6 |
| Dodge Bros. F 31 | 1½ | 770 | Own | L | 6 | 3¼x4¼ | 211.5 | 25.3 | 66@3200 | G | Fed | Borg | Cle | W-G | Car | P | DR | Own | | Own | Sp | 32.1 | L4IH | 229 | 165 | 2975 | 20x6.00 | 32x6 |
| Dodge Bros. F 30 | 1½ | 695 | Own | L | 6 | 3¼x4¼ | 211.5 | 25.3 | 66@3200 | C | Fed | Borg | Cle | W-G | Car | P | DR | Own | 4 | Own | Sp | 37.1 | L4IH | 120 | 136 | 3300 | 20x6.00 | 32x6 |
| Dodge Bros. F 35 | 1½ | 1425 | Own | L | 6 | 3⅜x3⅞ | 208.0 | 27.3 | 63@3200 | G | Long | Borg | Cle | Han | Zen | P | DR | Own | 4 | Own | Sp | 41.4 | L4IH | 311 | 140 | 3975 | 20x6.00 | 20x6.00D |
| Dodge Bros. F 36 | 1¼ | 1485 | Own | L | 6 | 3⅜x3⅞ | 208.0 | 27.3 | 63@3200 | G | Long | Borg | Cle | Han | Zen | P | DR | Own | 4 | Own | Sp | 41.4 | L4IH | 311 | 165 | 4175 | 20x6.00 | 20x6.00D |
| *Dodge Bros. F 40 | 2 | 1935 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 96@3000 | G | Long | Borg | Cle | Sag | DL | P | DR | Own | 4 | Own | Sp | 43.7 | L4IH | 350 | 150 | 5425 | 20x6.50 | 20x6.50D |
| *Dodge Bros. F 41 | 2 | 2085 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 96@3000 | G | Long | Borg | Cle | Sag | DL | P | DR | Own | 4 | Own | Sp | 43.7 | L4IH | 350 | 165 | 5465 | 20x6.50 | 20x6.50D |
| Dodge Bros. | 3 | 1515 | Own | L | 6 | 3⅜x4½ | 241.0 | 27.3 | 78@3000 | C | Long | Borg | Un | Han | Zen | Vac | NE | Own | 4 | Own | Sp | 46.3 | L4IH | 382 | 135 | 4235 | 32x6 | 32x6D |
| Dodge Bros. | 3 | 1565 | Own | L | 6 | 3⅜x4½ | 241.0 | 27.3 | 78@3000 | C | Long | Borg | Un | Han | Zen | Vac | NE | Own | 4 | Own | Sp | 41.4 | L4IH | 382 | 165 | 4520 | 32x6 | 32x6D |
| Dodge Bros. | 3 | 1615 | Own | L | 6 | 3⅜x4½ | 241.0 | 27.3 | 78@3000 | C | Long | Borg | Un | Han | Zen | Vac | NE | Own | 4 | Own | Sp | 46.3 | L4IH | 382 | 185 | 4715 | 32x6 | 32x6D |
| Dodge Bros. F 60 | 3 | 2645 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 96@3000 | G | Long | Borg | Cle | Sag | DL | P | DR | Own | 4 | Own | 2 R | 48.8 | L4IH | 416 | 146 | 5835 | 32x6 | 32x6D |
| *Dodge Bros. F 61 | 3 | 2575 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 96@3000 | G | Long | Borg | Cle | Sag | DL | P | DR | Own | 4 | Own | Sp | 48.8 | L4IH | 416 | 170 | 6075 | 32x6 | 32x6D |
| *Dodge Bros. F 62 | 3 | 2695 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 96@3000 | G | Long | Borg | Cle | Sag | DL | P | DR | Own | 4 | Own | Sp | 48.8 | L4IH | 416 | 195 | 6190 | 32x6 | 32x6D |
| Essex Com. | ¾ | 445 | Own | L | 6 | 2¾x4½ | 163.0 | 18.2 | 55@3300 | C | Har | Own | Spic | Gem | Mar | Vac | Aut | Own | 3 | Own | Sp | — | 4M | .. | 110 | *2125 | 20x5 | 20x5.50 |
| Federal D | 1½ | 795 | Con | L | 6 | 3⅞x4½ | 200.5 | 24.0 | 48@2500 | C | Long | Borg | Spic | Gem | Zen | P | DR | W-G | 4 | Cla | Sp | 40.8 | L4IH | 377 | 131 | *3280 | 20x6.00 | 32x6 |
| Federal E 6 | 1½ | 895 | Con | L | 6 | 3⅜x4 | 215.0 | 27.3 | 60@2600 | C | Long | Borg | Spic | Gem | Zen | P | DR | W-G | 4 | Cla | Sp | 36.3 | L4IH | 377 | 132 | 3330 | 20x6.00 | 32x6 |
| Federal F 7 | 1¾ | 1525 | Con | L | 6 | 3⅜x4⅜ | 248.0 | 27.3 | 64@2500 | C | Long | Borg | Spic | Gem | Zen | P | DR | Own | 4 | Tim | Sp | 29.2 | L4IH | 414 | 132 | 3810 | 30x5 | 30x5D |
| Federal A 6 | 2 | 1855 | Con | L | 6 | 3⅜x4⅝ | 248.0 | 27.3 | 64@2500 | C | Long | Borg | Pet | Ross | Zen | Vac | DR | Own | 4 | Cla | Sp | 38.5 | L4IH | 450 | 151 | 4635 | 32x6 | 32x6D |
| Federal A 6 T | 2½ | 2185 | Con | L | 6 | 3⅜x4⅝ | 248.0 | 27.3 | 64@2500 | C | Long | Borg | Pet | Ross | Zen | Vac | DR | Own | 4 | Tim | Sp | 47.1 | L4IHV | 659 | 151 | 5185 | 32x6 | 32x6D |
| Federal A 6 T W | 2½ | 2360 | Con | L | 6 | 3⅜x4⅝ | 248.0 | 27.3 | 64@2500 | C | Long | Borg | Pet | Ross | Zen | Vac | DR | Own | 4 | Tim | Wo | 52.8 | L4IHV | 659 | 151 | 5185 | 32x6 | 32x6D |
| *Federal D S W | 2½-3 | 1050 | Con | L | 4 | 3⅞x4¼ | 200.5 | 24.0 | 48@2500 | C | Long | Borg | Spic | Gem | Zen | P | DR | W-G | 4 | Cla | Sp | 40.8 | L6IH | 566 | 140 | 3980 | 20x6.00 | 32x6 |
| *Federal E 6 S W | 2½-3 | 1150 | Con | L | 6 | 3⅜x4 | 215.0 | 27.3 | 60@2600 | C | Long | Borg | Spic | Gem | Zen | P | DR | W-G | 4 | Cla | Sp | 40.8 | L6IH | 566 | 145 | 4030 | 20x6.00 | 32x6 |
| Federal T 10 B | 2½-3 | 2740 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 75@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Own | 4 | Tim | Sp | 45.6 | L4IHV | 659 | 165 | 6645 | 34x7 | 34x7D |
| Federal T 10 W | 2½-3 | 2915 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 75@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Own | 4 | Tim | Wo | 44.0 | L4IHV | 659 | 165 | 6645 | 34x7 | 34x7D |
| Federal T 10 D R | 2½-3 | 2915 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 75@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Own | 4 | Tim | 2 R | 45.6 | L4IHV | 659 | 165 | 6645 | 34x7 | 34x7D |
| Federal U 6 | 3-3½ | 3860 | Con | H | 6 | 4 x4½ | 339.0 | 38.4 | 85@2200 | C | Long | Borg | Pet | Ross | Str | P | DR | Br-L | 7 | Tim | Wo | 64.6 | L4IHV | 676 | 165 | 7315 | 34x7 | 34x7D |
| Federal U 6 D R | 3-3½ | 3860 | Con | H | 6 | 4 x4½ | 339.0 | 38.4 | 85@2200 | C | Long | Borg | Pet | Ross | Str | P | DR | Br-L | 7 | Tim | 2 R | 69.6 | L4IHV | 767 | 165 | 7315 | 34x7 | 34x7D |
| Federal 4 C 6 A | 4-5 | 4735 | Con | H | 6 | 4⅛x4¾ | 381.0 | 40.8 | 90@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Br-L | 7 | Tim | Wo | 72.2 | L4IHV | 894 | 192 | 8460 | 36x8 | 36x8D |
| Federal 4 C 6 A D R | 4-5 | 4735 | Con | H | 6 | 4⅛x4¾ | 381.0 | 40.8 | 90@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Br-L | 7 | Tim | 2 R | 80.6 | L4IHV | 894 | 192 | 8460 | 36x8 | 36x8D |
| Federal 4 C 6 A B | 4-5 | 4960 | Con | H | 6 | 4⅛x4¾ | 381.0 | 40.8 | 90@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Br-L | 7 | Tim | Wo | 72.2 | T4IA | 921 | 192 | 8980 | 36x8 | 36x8D |
| Federal 4 C 6 A B D R | 4-5 | 4960 | Con | H | 6 | 4⅛x4¾ | 381.0 | 45.9 | 90@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Br-L | 7 | Tim | 2 R | 80.6 | T4IA | 421 | 192 | 8980 | 36x8 | 36x8D |
| *Federal U 6 S W | 6 | 6000 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 90@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Br-L | 7 | Tim | Wo | 71.3 | L6IHV | 1093 | 201 | 10395 | 34x7 | 34x7D |
| *Federal U 6 S W A B | 6 | 6500 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 90@2200 | C | Long | Borg | Pet | Ross | Zen | P | DR | Br-L | 7 | Tim | Wo | 71.3 | TrIA | 867 | 201 | 10395 | 34x7 | 34x7D |
| Federal X 8 | 7½ | 5085 | Con | L | 4 | 5 x6 | 471.0 | 40.0 | 61@1350 | G | Long |

# Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE EIGHT)

| Make and Model | Capacity—Tons or Lbs. | Chassis Price | Engine | Valve Arr'g'm't | No. of Cyls. | Bore and Stroke | Piston Disp. | Tax H. P. | Max. Brake H. P. and Peak R. P. M. | Type Camshaft Drive | Radiator Make | Clutch Make | Universals Make | Steering Gear Make | Carburetor Make | Fuel Feed Type | Make Electr'l System | Make Transmission | No. Spds. For. | Rear Axle Make | Type Final Drive | Final Gear Reduction | Type Service Brakes | Area Service Brakes | Standard Wheel Base | Chassis Wgt. | Standard Tire Sizes Front | Rear |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General Motors T 42 | *15000 | 1845 | Buick | H | 6 | 3⅛x4⅝ | 257.5 | 28.3 | 76@2500 | G | Long | Own | Spic | Sag | Mar | P | DR | Mun | 4 | Eat | Sp | 33.4 | B4IM | 524 | 141 | 4725 | 32x6P | 32x6DP |
| General Motors T-44 | *16000 | 1935 | Buick | H | 6 | 3⅛x4⅝ | 257.5 | 28.3 | 76@2500 | G | Long | Own | Spic | Sag | Mar | P | DR | Mun | 4 | Eat | 2 R | 40.9 | B4IM | 524 | 141 | 5005 | 32x6P | 32x6DP |
| General Motors T-45 | *16000 | 1990 | Own | H | 6 | 3⅛x4⅝ | 257.5 | 28.3 | 76@2500 | G | Long | Own | Spic | Sag | Mar | P | DR | Mun | 4 | Eat | 2 R | 50.7 | B4IM | 524 | 141 | 5050 | 32x6P | 32x6DP |
| General Motors T-51 | *19000 | 2565 | Own | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Spic | Sag | Mar | P | DR | Mun | 4 | Eat | Sp | 40.6 | B4IM | 574 | 155 | 5855 | 34x7P | 34x7DP |
| General Motors T-55 | *19000 | 2690 | Own | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Spic | Sag | Mar | P | DR | Mun | 4 | Eat | 2 R | 49.8 | B4IM | 574 | 155 | 6095 | 34x7P | 34x7DP |
| General Motors T-60 | *22000 | 3035 | Buick | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Spic | Sag | Mar | P | DR | Mun | 4 | Tim | Wo | 52.5 | B4IM | 685 | 154 | 6925 | 34x7P | 34x7DP |
| General Motors T-61 | *22000 | 3445 | Own | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Spic | Sag | Str | P | DR | Mun | 4 | Tim | Wo | 52.5 | B4IMV | 685 | 154 | 6965 | 20x9.00B | 20x9.00DB |
| General Motors T-82 | *24000 | 3795 | Own | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Pet | Sag | Str | P | DR | Mun | 12 | Tim | Wo | 142.5 | B4IM | 793 | 155 | 7500 | 20x9.00B | 20x9.00DB |
| General Motors T-83 | *24000 | 3990 | Own | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Spic | Sag | Str | P | Dr | Mun | 12 | Tim | Wo | 142.5 | B4IMV | 865 | 155 | 7670 | 20x9.00B | 20x9.00DB |
| General Motors T-85 | *26000 | 5600 | Own | H | 8 | 4¼x5½ | 468.0 | 43.3 | 115@2200 | C | Long | Own | Spic | Sag | Str | P | DR | Ful | 4 | Tim | 2 R | 53.3 | B4IMV | 865 | 171 | 10630 | 20x9.75B | 20x9.75DB |
| †General Motors T-90 | *28000 | 5285 | Own | H | 6 | 3⅜x5 | 331.4 | 33.7 | 94@2500 | G | Long | Own | Pet | Sag | Str | P | DR | Mun | 12 | Tim | Wo | 129.0 | BrIA | 868 | 185 | 9400 | 20x7.50B | 20x7.50DB |
| †General Motors T-95 | *34000 | 7545 | Own | H | 6 | 4¼x5½ | 468.0 | 43.3 | 115@2200 | C | Long | Own | Spic | Sag | Str | P | DR | Ful | 4 | Tim | Wo | 53.3 | B6IA | 1191 | 189 | 13250 | 34x7P | 34x7DP |
| †General Motors T-96 | *34000 | 7195 | Own | H | 6 | 4¼x5½ | 468.0 | 43.3 | 115@2200 | C | Long | Own | Spic | Sag | Str | P | DR | Ful | 4 | Tim | 2 R | 51.1 | B6IA | 1191 | 189 | 12850 | 34x7P | 34x7DP |
| Gramm A X 4 | 1 | 795 | Con | L | 4 | 3⅞x4 | 200.4 | 24.0 | 50@2800 | C | Per | Jon | Blo | Ross | Til | P | Aut | W-G | 4 | Tim | Sp | 36.3 | L4IH | 380 | 131 | *3300 | 20x6.00 | 20x6.50 |
| Gramm A X 6 | 1 | 895 | Con | L | 6 | 3⅜x4 | 214.0 | 27.3 | 61@3000 | C | Per | Jon | Blo | Ross | Til | P | Aut | W-G | 4 | Tim | Sp | 36.3 | L4IH | 380 | 131 | 3550 | 20x6.00 | 20x6.50 |
| Gramm B X 4 | 1½ | 895 | Con | L | 4 | 3⅞x4¼ | 200.4 | 24.0 | 50@2800 | C | Per | Jon | Blo | Ross | Til | P | Aut | W-G | 4 | Tim | Sp | 36.3 | L4IH | 380 | 131 | 3475 | 20x6.00 | 20x6.00D |
| Gramm B X 6 | 1½ | 995 | Con | L | 6 | 3⅜x4 | 214.7 | 27.3 | 61@3000 | C | Per | Jon | Blo | Ross | Til | P | Aut | W-G | 4 | Tim | Sp | 36.3 | L4IH | 380 | 131 | 3725 | 20x6.00 | 20x6.00D |
| Gramm B | 1¾ | 1495 | Lyc | L | 6 | 3¼x4½ | 224.0 | 25.3 | 61@2900 | G | Per | Own | Blo | Ross | Zen | Vac | Aut | Cov | 4 | Tim | Sp | 34.3 | L4IH | 278 | 140 | 4150 | 20x6.50 | 20x6.50D |
| †Gramm C X 4 | 2 | 1095 | Con | L | 4 | 4⅛x4¼ | 227.0 | 27.2 | 55@2600 | G | Per | Jon | Blo | Ross | Til | P | Aut | W-G | 4 | Tim | Sp | 37.0 | L4IH | 452 | 131 | 3900 | 20x6.50 | 20x6.50D |
| Gramm 16 | 2 | 1095 | Knight | S | 6 | 2⅛x4⅜ | 177.9 | 20.7 | 53@2600 | C | Own | Borg | Blo | Ross | Til | Vac | Aut | Cov | 4 | Eat | Sp | — | — | — | 151 | —— | 30x5 | 32x6 |
| Gramm C X 6 | 2 | 1295 | Con | L | 6 | 3⅜x4⅜ | 248.2 | 27.3 | 70@3000 | C | Per | Jon | Blo | Ross | Til | P | Aut | W-G | 4 | Tim | Sp | 37.0 | L4IH | 452 | 131 | 4150 | 20x6.50 | 20x6.50D |
| Gramm 21 | 2½ | 1295 | Knight | S | 6 | 3⅜x4⅜ | 255. | 27.3 | 70@2600 | C | Own | Jon | Blo | Ross | Til | Vac | Aut | Cov | 4 | — | — | — | — | — | 164 | —— | 32x6 | 34x7 |
| Gramm C | 2 | 1795 | Lyc | L | 8 | 3⅝x4½ | 278.6 | 31.5 | 82@2600 | G | Per | Own | Blo | Ross | Zen | P | Aut | Cov | 4 | Tim | Sp | 31.0 | L4IH | 353 | 160 | 4800 | 20x7.00 | 20x7.00D |
| Gramm D | 2½ | 1995 | Lyc | L | 8 | 3¾x4½ | 299.0 | 33.7 | 90@2300 | G | Per | Jon | Blo | Ross | Zen | P | Aut | Cov | 4 | Tim | Sp | 33.0 | L4IHV | 339 | 160 | 5200 | 20x7.50 | 20x7.50D |
| Gramm 75 | 3 | 2395 | Knight | S | 6 | 3⅜x4⅝ | 255. | 27.3 | 70@2600 | C | Own | Jon | Blo | Ross | Til | Vac | Aut | Cov | 4 | Wis | 2R | — | — | — | 190 | —— | 20x7.50 | 20x7.50D |
| Gramm E | 3 | 2595 | Lyc | L | 6 | 3⅞x5 | 353.8 | 36.0 | 90@2200 | G | Per | Own | Blo | Ross | Zen | P | Aut | Cov | 4 | Tim | Sp | 35.0 | L4IHV | 659 | 160 | 5950 | 20x8.25 | 20x8.25D |
| Gramm E Y | 3 | 3595 | Con | H | 6 | 4⅛x4¾ | 380.8 | 40.8 | 90@2200 | C | Per | Ful | Blo | Ross | Zen | P | Aut | Cov | 4 | Tim | Sp | 30.0 | L4IHA | — | 190 | 7200 | 20x7.50 | 20x7.50D |
| Gramm G Y | 4 | 4345 | Con | H | 6 | 4⅜x4¾ | 428.4 | 45.9 | 100@2200 | C | Per | Ful | Blo | Ross | Zen | P | Aut | Cov | 4 | Wis | 2 R | 28.0 | BW4IM | — | 210 | 7700 | 20x8.25 | 20x8.25D |
| Gramm G W | 4 | 5175 | Con | H | 6 | 4⅜x4¾ | 428.0 | 45.9 | 100@2200 | C | Per | Ful | Blo | Ross | Zen | P | Aut | Cov | 4 | Wis | 2 R | — | 4IA | 864 | 157 | 9500 | 20x9.00 | 20x9.00D |
| Gramm H Y | 5 | 6545 | Con | L | 6 | 4¾x5¾ | 611.4 | 54.1 | 127@2300 | G | Per | Ful | Blo | Ross | Zen | P | Aut | Ful | 4 | Wis | 2 R | 25.2 | 4IA | — | 236 | 10100 | 36x8 | 36x8D |
| Indiana 60 | *6000 | 995 | Con | L | 6 | 3⅜x4 | 214.7 | 27.3 | 61@3000 | C | G & O | Borg | Spic | Ross | Zen | P | Aut | W-G | 3 | Col | Sp | 19.8 | B4IM | 297 | 132 | *3200 | 30x5 | 30x5 |
| Indiana 64 | 6500 | 1195 | Con | L | 6 | 3⅜x4⅝ | 248.2 | 27.3 | 65@2700 | C | Long | Borg | Spic | Ross | Str | Vac | Aut | Br-L | 3 | Col | Sp | 21.3 | C4IM | 244 | 137 | 3400 | 30x5 | 30x5 |
| Indiana 74 | 7580 | 1290 | Con | L | 6 | 3⅜x4⅝ | 248.2 | 27.3 | 65@2700 | C | Long | Borg | Spic | Ross | Str | Vac | Aut | Br-L | 4 | Col | Sp | 25.6 | C4IM | 180 | 137 | 3450 | 32x6 | 32x6 |
| Indiana 89 | 9000 | 1525 | Con | L | 6 | 3⅜x4⅝ | 248.2 | 27.3 | 65@2700 | C | Long | Borg | Spic | Ross | Str | Vac | Aut | Br-L | 4 | Col | Sp | 26.9 | C4IM | 293 | 149 | 4050 | 32x6 | 32x6 |
| Indiana 111 XW | 12500 | 1850 | Her | L | 4 | 4 x5 | 251.3 | 25.6 | 46@2000 | G | McC | Borg | Spic | Ross | Str | Vac | Aut | Br-L | 4 | Wis | 2 R | 35.2 | K2IM | 270 | 120 | 3740 | 32x6 | 32x6D |
| Indiana 120 | 12000 | 1990 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 73@2400 | C | G & O | Br-L | Spic | Ross | Str | P | Aut | Br-L | 4 | Tim | Sp | 31.3 | L4IH | 353 | 156 | 5200 | 32x6 | 32x6D |
| Indiana 140 | 14000 | 2495 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 73@2400 | C | G & O | Br-L | Spic | Ross | Str | P | Aut | Br-L | 4 | Wis | 2 R | 35.3 | 5IHV | 356 | 156 | 5500 | 32x6 | 32x6D |
| Indiana 141 | 17000 | 2935 | Con | H | 6 | 4 x4⅛ | 311.0 | 38.4 | 73@2400 | C | G & O | Br-L | Spic | Ross | Str | P | Aut | Br-L | 4 | Wis | 2 R | 46.2 | L4IHV | 380 | 170 | 6200 | 32x6 | 32x6D |
| Indiana 170 | 17000 | 3160 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 89@2400 | C | G & O | Br-L | Spic | Ross | Str | P | Aut | Br-L | 4 | Wis | 2 R | 46.6 | L4IHV | 380 | 170 | 6800 | 32x6 | 32x6D |
| Indiana 175 | 17500 | 3660 | Con | H | 6 | 4⅜x4¾ | 427.5 | 45.9 | 100@2400 | C | G & O | —— | Spic | Ross | Str | P | Aut | —— | 5 | Wis | 2 R | 45.3 | L4IHV | 380 | 170 | 7200 | 34x7 | 34x7D |
| Indiana 195 | 19500 | 3820 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 89@2400 | C | G & O | Br-I | Spic | Ross | Str | P | Aut | Br-L | 4 | Wis | 2 R | 49.5 | L4IHV | 471 | 170 | 7500 | 34x7 | 34x7D |
| Indiana 190 | 13000 | 4185 | Con | H | 6 | 4⅛x4¾ | 380.9 | 40.8 | 89@2400 | C | Long | Borg | Spic | Ross | Str | P | Aut | Br-L | 7 | Tim | Wo | 78.6 | T2IMV | 500 | 168½ | 7625 | 34x7 | 34x7D |
| Indiana 220 | 22000 | 4566 | Con | H | 6 | 4⅜x4¾ | 427.5 | 45.9 | 100@2400 | C | G & O | Br-L | Spic | Ross | Str | P | Aut | Br-L | 4 | Wis | 2 R | 50.7 | L4IHV | 546 | 170 | 8200 | 36x8 | 36x8D |
| Indiana 250 | 25000 | 5950 | Con | H | 6 | 4⅜x4¾ | 427.5 | 45.9 | 100@2400 | C | Long | Br-L | Spic | Ross | Str | P | Aut | Br-L | 4 | Tim | Wo | 63.7 | LT4IHV | 664 | 182 | 10000 | 40x8 | 40x8D |
| Indiana 290 | 30000 | 7250 | Con | L | 6 | 4¾x5¾ | 611.4 | 54.1 | 116@1800 | C | Long | Br-L | Spic | Ross | Str | P | L-N | Br-L | 7 | Tim | Wo | 95.0 | T4IA | 676 | 182 | 10750 | 38x7P | 40x14S |
| *Indiana 640 | 40000 | 9700 | Con | L | 6 | 4¾x5¾ | 611.4 | 54.1 | 116@1800 | C | Long | Br-L | Spic | Ross | Str | P | L-N | Br-L | 7 | Tim | Wo | 90.9 | T4IA | 864 | 212 | 14000 | 38x7P | 36x16S |
| International A 2 | 1½ | 675 | Wak | L | 4 | 3⅝x4½ | 186.0 | 21.0 | 39@2400 | G | Mod | Mec | Mec | Ross | Zen | Vac | DR | W-G | 4 | Own | Sp | 39.5 | BE4IM | 212 | 136 | *2935 | 5.50x20 | 6.00x20 |
| International B 2 | 1½ | 725 | Wak | L | 4 | 3⅝x4½ | 186.0 | 21.0 | 39@2400 | G | Mod | Mec | Mec | Ross | Zen | Vac | DR | Mec | 3 | Own | Sp | 47.3 | BE4IM | 212 | 136 | 2960 | 5.50x20 | 6.00x20 |
| International A L 8 | 1½ | 1450 | Lyc | L | 6 | 3¼x4½ | 224.0 | 25.3 | 52@2700 | G | Mod | Own | Mec | Ross | Zen | Vac | DR | W-G | 4 | Own | Sp | 42.9 | B4IM | 295 | 138 | 4032 | 20x6.00 | 20x6.00D |
| International A 4 | 2 | 1866 | Own | H | 6 | 3⅝x4½ | 279.0 | 31.5 | 67@2600 | G | Mod | Own | Mec | Ross | Zen | Vac | DR | Own | 5 | Own | Sp | 47.8 | BE4IM | 378 | 145 | 5221 | 32x6 | 32x6D |
| International A 5 | 3 | 2550 | Own | H | 6 | 3⅝x4½ | 279.0 | 31.5 | 67@2600 | G | Mod | Own | Mec | Ross | Zen | Vac | DR | Own | 5 | Own | Sp | 52.6 | BE4IM | 430 | 156 | 5895 | 34x7 | 34x7D |
| International A 6 | 3 | 2675 | Own | H | 6 | 3⅝x4½ | 279.0 | 31.5 | 67@2600 | G | Mod | Own | Mec | Ross | Zen | Vac | DR | Own | 5 | Own | Sp | 62.5 | BE4IM | 430 | 156 | 6120 | 34x7 | 34x7D |
| International W 1 | 2½ | 3850 | Hall | H | 4 | 4¼x5½ | 312.0 | 28.9 | 59@2000 | C | Own | Own | Own | Own | Zen | Vac | RB | Own | 5 | Own | 2 R | 60.5 | BE4IM | 710 | 148 | 8360 | 36x8S | 36x8S |
| International W 3 | 3½ | 4858 | Hall | H | 4 | 4¾x5½ | 390.0 | 36.1 | 69@2000 | C | Own | Own | Own | Own | Zen | Vac | RB | Own | 5 | Own | 2 R | 70.5 | BE4IM | 794 | 160 | 10125 | 36x8S | 40x12S |
| La France Rep. A 1 | 6000 | 795 | Lyc | L | 6 | 3 x4¾ | 201.5 | 21.5 | 60@2500 | G | G & O | Borg | Spic | Han | Zen | Vac | Aut | Ful | 4 | Tim | Sp | 36.1 | L4IH | 378 | 132 | 3000 | 20x5.50 | 32x6 |
| La France Rep. C 1 | 7500 | 1295 | Lyc | L | 6 | 3¼x4½ | 224.0 | 25.4 | 61@2750 | G | G & O | Eorg | Spic | Han | Zen | Vac | Aut | Ful | 4 | Tim | Sp | 29.1 | L4IH | 413 | 144 | 3300 | 20x6.00 | 32x6 |
| La France Rep. D 1 | 9000 | 1595 | Lyc | L | 6 | 3¼x4½ | 224.0 | 25.4 | 61@2750 | G | G & O | Borg | Spic | Han | Zen | Vac | Aut | Ful | 4 | Tim | Sp | 37.9 | L4IH | 448 | 144 | 3725 | 30x5 | 30x5D |
| La France Rep. F-3 | 13000 | 2395 | Lyc | L | 6 | 3⅜x4½ | 299.0 | 33.7 | 80@2500 | G | Per | Ful | Spic | Han | Zen | P | Aut | Ful | 4 | Tim | Sp | 40.1 | L4IHV | 628 | 174 | 5520 | 34x7 | 34x7 |
| La France Rep. H 2 | 16000 | 2585 | Lyc | L | 6 | 3⅞x5 | 354.0 | 36.0 | 85@2300 | G | Per | Ful | Spic | Han | Zen | P | Aut | Ful | 4 | Wis | 2 R | 41.6 | L4IHV | 658 | 174 | 6370 | 34x7 | 34x7D |
| La France Rep. M 2 | 20000 | 4000 | Wak | L | 6 | 4⅜x5⅛ | 462.0 | 46.0 | 97@2000 | G | Per | Ful | Spic | Han | Zen | P | Aut | Ful | 5 | Wis | 2 R | 48.1 | L4IHV | 768 | 174 | 7500 | 36x8 | 36x8D |
| La France Rep. 35-2 | 24000 | 5600 | Wak | L | 6 | 4½x5¾ | 549.0 | 48.6 | 98@1850 | G | Own | Ful | Spic | Han | Zen | P | Aut | Ful | 4 | Wis | 2 R | 45.4 | L4IHV | 870 | 174 | 9250 | 38x9 | 38x9D |
| Maccar 36 A | 1½ | 1900 | Bud | L | 6 | 3¾x4½ | 298.0 | 33.7 | 83@2800 | G | Per | Br-L | Spic | Ross | Str | P | DR | Br-L | 4 | Tim | Sp | 30.6 | L4IH | 315 | 171 | 4850 | 32x6 | 32x6D |
| Maccar 40 A | 2 | 2400 | Bud | L | 6 | 3¾x4½ | 298.0 | 33.7 | 83@2800 | G | Per | Br-L | Spic | Ross | Str | P | DR | Br-L | 4 | Tim | Sp | 38.8 | L4IHV | 325 | 171 | 5340 | 32x6 | 32x6D |
| Maccar 56 | 3 | 3350 | Bud | L | 6 | 3¾x5 | 311.0 | 33.7 | 72&2100 | G | Per | Br-L | Spic | Ross | Str | Vac | DR | Br-L | 4 | Wis | 2 R | 37.4 | L4IHV | 411 | 183 | 6200 | 34x7 | 34x7D |
| Maccar 60 | 3 | 3950 | Bud | L | 6 | 4⅛x5⅛ | 411.0 | 40.8 | 103@2100 | G | Per | Br-L | Spic | Ross | Str | Vac | DR | Br-L | 4 | Tim | Wo | 34.3 | L4IHV | 411 | 183 | 6600 | 20x9.00 | 20x9.00D |
| Maccar 66 A | 4 | 5500 | Her | L | 6 | 4⅝x4¾ | 479.0 | 51.3 | 106@2100 | G | Per | Br-L | Spic | Ross | Zen | Vac | DR | Br-L | 7 | Tim | Wo | 64.5 | W4IA | 617.5 | 206 | 8200 | 20x9.75 | 20x9.75D |
| Maccar 86 A | 5 | 5950 | Her | L | 6 | 4⅝x4¾ | 479.0 | 51.3 | 106@2100 | G | Per | Br-L | Spic | Ross | Zen | Vac | DR | Br-L | 7 | Tim | Wo | 72.3 | W4IA | 623 | 206 | 9500 | 20x10.50 | 20x10.50D |
| †Maccar SW-86 | 10 | 7650 | Her | L | 6 | 4⅝x4¾ | 479.0 | 51.3 | 106@2100 | G | Per | Br-L | Spic | Ross | Zen | Vac | DR | Br-L | 7 | Tim | Wo | 72.3 | T6IA | 103 | 206 | 11700 | 20x9.75 | 20x9.75D |
| ††Mack B L | —— | 2500 | Own | L | 6 | 3¼x5 | 248.9 | 25.3 | 63@2800 | G | Own | Own | Spic | Gem | Str | Vac | NE | Own | 4 | Tim | Sp | Opt | L4IH | 302 | 148 | *4450 | 20x6.00B | 20x6.00DB |
| ††Mack B G | —— | 3000 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 75@2600 | G | Own | Own | Spic | Own | Str | Vac | NE | Own | 4 | Own | Sp | Opt | O4IV | 415 | 156 | 5200 | 32x6 | 32x6D |
| ††Mack A B | —— | 4350 | Own | L | 4 | 4¼x5 | 283.7 | 28.9 | 60@2200 | G | Own | Own | Spic | Own | Str | Gra | NE | Own | 4 | Own | 2 R | Opt | O4IV | 471 | 146½ | 7100 | 34x7 | 34x7D |
| Mack A B | —— | 4000 | Own | L | 4 | 4¼x5 | 283.7 | 28.9 | 60@2200 | G | Own | Own | Spic | Own | Str | Vac | NE | Own | 4 | Own | Ch | Opt | O4IV | 471 | 146½ | 6850 | 34x7 | 34x7D |
| ††Mack A B | —— | 4500 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 75@2600 | G | Own | Own | Spic | Own | Str | Gra | NE | Own | 4 | Own | 2 R | Opt | O4IV | 471 | 146½ | 7050 | 34x7 | 34x7D |
| ††Mack B C | —— | 4150 | Own | L | 6 | 3⅝x5 | 309.6 | 31.5 | 75@2600 | G | Own | Own | Spic | Own | Str | Vac | NE | Own | 4 | Own | Ch | Opt | O4IV | 471 | 146½ | 6850 | 34x7 | 34x7D |
| ††Mack B C | —— | 5250 | Own | L | 6 | 4 x5½ | 417.7 | 38.4 | 100@2300 | G | Own | Own | Spic | Own | Str | Vac | NE | Own | 4 | Own | 2 R | Opt | O4IV | 471 | 154 | 8350 | 36x8 | 36x8D |
| ††Mack B C | —— | 5500 | Own | L | 6 | 4 x5½ | 417.7 | 38.4 | 100@2300 | G | Own | Own | Spic | Own | Str | Vac | NE | Own | 4 | Own | Ch | Opt | O4IV | 610 | 154 | 8500 | 36x8 | 36x8D |
| ††Mack B J | —— | 6150 | Own | L | 6 | 4½x5½ | 525.2 | 48.6 | 126@2200 | G | Own | Own | Spic | Own | Str | Vac | L-N | Own | 4 | Own | 2 R | Opt | O4IV | 567 | 168½ | 10100 | 36x8 | 36x8D |
| ††Mack A K | —— | 5150 | Own | L | 4 | 5 x6 | 471.2 | 40.0 | 77@1800 | G | Own | Own | Spic | Own | Str | Gra | RB | Own | 4 | Own | Ch | Opt | O4IV | 492 | 162 | 9800 | 36x8S | 36x8DS |
| ††Mack A K | —— | 5250 | Own | L | 4 | 5 x6 | 471.2 | 40.0 | 77@1800 | G | Own | Own | Spic | Own | Str | Gra | RB | Own | 4 | Own | 2 R | Opt | O4IV | 492 | 162 | 9700 | 36x8S | 36x8DS |
| ††Mack A C | —— | 4950 | Own | L | 4 | 5 x6 | 471.2 | 40.0 | 77@1800 | G | Own | Own | Spic | Own | Str | Gra | RB | Own | 4 | Own | Ch | Opt | OJXM | 194 | 156 | 9500 | 36x8S | 40x8DS |
| ††Mack A K | —— | 6450 | Own | L | 6 | 4½x5½ | 525.5 | 48.6 | 126@2200 | G | Own | Own | Spic | Han | Str | Vac | L-N | Own | 4 | Own | 2 R | Opt | O4IV | 492 | 174 | 10950 | 22x10.50B | 22x10.50DS |
| ††Mack A C | —— | 5500 | Own | L | 4 | 5 x6 | 471.2 | 40.0 | 77@1800 | G | Own | Own | Spic | Own | Str | Gra | RB | Own | 4 | Own | Ch | Opt | OJXM | 194 | 156 | 10100 | 36x6S | 40x6DS |
| ††Mack A C | —— | 6550 | Own | L | 6 | 4½x5½ | 525.5 | 48.6 | 126@2200 | G | Own | Own | Spic | Han | Str | Vac | L-N | Own | 4 | Own | Ch | Opt | O4IV | 492 | 174 | 11950 | 24x10.50B | 24x10.50DB |
| ††Mack A C | —— | 6000 | Own | L | 4 | 5 x6 | 471.2 | 40.0 | 77@1800 | G | Own | Own | Spic | Own | Str | Gra | RB | Own | 4 | Own | Ch | Opt | OJXM | 194 | 156 | 10450 | 36x7S | 40x7DS |
| ††Mack A P | —— | 9500 | Own | L | 6 | 5 x6 | 706.5 | 60.0 | 150@2000 | G | Own | Own | Spic | Own | Str | Gra | NE | Own | 4 | Own | Ch | Opt | O2IV | 287 | 191 | 12200 | 36x7S | 40x8DS |
| ††Mack A K 6—6 wheel | —— | 9500 | Own | L | 6 | 4½x5½ | 525.2 | 48.6 | 126@2200 | G | Own | Own | Spic | Own | Str | Vac | L-N | Own | 4 | Own | 2 R | Opt | ON1A | 574 | 152-52 | 16300 | 9.75x22B | 9.75x22DB |
| ††Mack A C 6 wheel | —— | 7650 | Own | L | 4 | 5 x6 | 471.2 | 40.0 | 77@1800 | G | Own | Own | Spic | Own | Str | Gra | RB | Own | 4 | Own | Ch | Opt | ORIV | 574 | 125-52 | 13800 | 36x6S | 40x12S |
| ††Mack A C 6—6 wheel | —— | 9000 | Own | L | 6 | 4½x5½ | 525.2 | 48.6 | 126@2200 | G | Own | Own | Spic | Own | Str | Vac | L-N | Own | 4 | Own | Ch | Opt | O6IA | 574 | 145-52 | 14950 | 40x8 | 40x8D |
| Mack A P 6 wheel | —— | 11500 | Own | L | 6 | 5 x6 | 706.5 | 60.0 | 150@2000 | G | Own | Own | Spic | Own | Str | Gra | NE | Own | 4 | Own | Ch | Opt | O6IA | 574 | 145-52 | 15250 | 40x8 | 40x8D |
| ††Mack A P 6 wheel | —— | 12000 | Own | L | 6 | 5 x6 | 706.5 | 60.0 | 150@2000 | G | Own | Own | Spic | Own | Str | Gra | NE | Own | 4 | Own | 2 R | Opt | O6IA | 574 | 145-52 | —— | 22x9.75B | 22x9.75B |
| Paige | ½ | *895 | Own | L | 6 | 3⅛x4½ | 207.0 | 23.4 | 66@3200 | C | Long | Long | Un | Ross | DL | F | DR | — | 3 | —— | Sp | 14.2 | 4HI | 264 | 115 | †2350 | 18x5.50B | 18x5.50B |
| Pierce-Arrow P T | 12000 | 2950 | Own | L | 6 | 3¾x4½ | 298.0 | 33.5 | 70@2600 | G | Long | Long | Cle | Han | Zen | P | DR | Cla | 4 | Tim | Sp | —— | B4IMV | 388 | 160 | *5600 | 20x7.50B | 20x7.50B |
| Pierce-Arrow P W | 18000 | 4150 | Own | L | 6 | 4¼x4½ | 361.0 | 40.3 | 77@2400 | G | Long | Long | Cle | Han | Zen | P | DR | Cov | 4 | Tim | *Wo | —— | W4IA | 488 | 150 | 6660 | 20x9.00B | 20x9.00B |
| Pierce-Arrow P X | 24000 | 5375 | Own | L | 6 | 4⅝x4¾ | 479.0 | 51.3 | 103@2200 | G | Long | Long | Cle | Han | Zen | P | DR | Cov | 4 | Tim | Wo | —— | W4IA | 610 | 160 | 9300 | 20x10.50B | 20x10.50B |
| Pierce-Arrow P Y | 28000 | 5950 | Own | L | 6 | 4⅝x4¾ | 479.0 | 51.3 | 103@2200 | G | Long | Long | Cle | Han | Zen | P | DR | Cov | 4 | Own | *Wo | —— | W4IA | 701 | 160 | 10675 | 24x10.50B | 24x10.50B |
| Pierce-Arrow P Z | 34000 | 6950 | Own | L | 6 | 4¾x5¾ | 611.0 | 54.1 | 130@2000 | G | Long | Long | Cle | Han | Zen | P | DR | Own | 4 | Own | *Wo | —— | W4IA | 702 | 168 | 12800 | 36x7B | 40x16B |
| Relay Series 15 AA | ¾ | 1370 | Con | L | 6 | 3⅜x4 | 214.7 | 27.3 | 52@2200 | C | Long | Borg | Blo | Han | Str | Vac | Aut | W-G | 4 | Own | 2R | 38.4 | L4IH | 297 | 131 | 3750 | 30x5P | 30x5P |
| Relay Series 15 AB | 1 | 1400 | Con | L | 6 | 3⅜x4 | 214.7 | 27.3 | 52@2200 | C | Long | Borg | Blo | Han | Str | Vac | Aut | W-G | 4 | Own | 2R | 38.4 | L4IH | 297 | 131 | 3800 | 30x5P | 30x5P |
| Relay Series S 11 | 1 | 1700 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Own | 2R | 25.5 | L4IH | 297 | 142 | 4050 | 30x5P | 30x5P |
| Relay Series S 11 | 1½ | 1900 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Own | 2R | 30.0 | L4IH | 297 | 162 | 4500 | 30x5P | 30x5DP |
| Relay Series 40 | 1½ | 2990 | Bud | L | 8 | 3⅝x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Own | 2R | 34.5 | L4IH | 394 | 168 | 5300 | 34x5P | 34x5DP |
| Relay Series 40 | 2 | 3240 | Bud | L | 6 | 3⅝x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Own | 2R | 34.5 | L4IH | 394 | 168 | 5500 | 36x6 | 36x6D |
| Relay Series 50 | 2 | 3860 | Bud | L | 6 | 3¾x5 | 331.0 | 33.7 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 5 | Own | 2R | 58.5 | L4IH | 584 | 161 | 6800 | 36x6 | 36x6D |
| Relay Series S 11 | 2 | 2030 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Own | 2R | 30.0 | L4IH | 297 | 162 | 4700 | 32x6P | 32x6DP |
| Relay Series 40 | 2½ | 3275 | Bud | L | 6 | 3⅝x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Own | 2R | 34.5 | L4IH | 394 | 168 | 5700 | 36x6 | 36x6D |
| Relay Series 50 | 2½ | 4060 | Bud | L | 6 | 3¾x5 | 331.0 | 33.7 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 5 | Own | 2R | 58.5 | L4IH | 584 | 161 | 7000 | 36x6 | 36x7D |
| Relay Series 60 | 2½ | 4555 | Bud | L | 6 | 4⅛x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Own | 2R | 58.5 | L4IH | 584 | 175 | 7350 | 36x6 | 36x6D |
| Relay Series 50 | 3 | 4130 | Bud | L | 6 | 3¾x5 | 330.0 | 33.7 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 5 | Own | 2R | 58.5 | L4IH | 584 | 161 | 7200 | 36x6 | 40x8D |
| Relay Series 60 | 3 | 4595 | Bud | L | 6 | 4⅛x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Own | 2R | 58.5 | L4IH | 584 | 175 | 7500 | 36x6 | 38x7D |
| Relay Series 80 | 3 | 5170 | Bud | L | 6 | 4½x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Borg | Blo | Ross | Zen | Vac | Aut | Cov | 8 | Own | 2R | 84.1 | —— | — | 175 | 8400 | 36x6 | 40x10S |
| Relay Series 60 | 3½ | 4745 | Bud | L | 6 | 4½x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Own | 2R | 58.5 | L4IH | 584 | 175 | 7800 | 38x7 | 40x8D |
| Relay Series 80 | 3½ | 5330 | Bud | L | 6 | 4½x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Borg | Blo | Ross | Zen | Vac | Aut | Cov | 8 | Own | 2R | 84.1 | —— | — | 175 | 8800 | 36x6 | 40x12S |
| Relay Series 80 | 4 | 5380 | Bud | L | 6 | 4½x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Borg | Blo | Ross | Zen | Vac | Aut | Cov | 8 | Own | 2R | 84.1 | —— | — | 175 | 8800 | 38x7 | 40x14S |

# Major Specifications and Mechanical Details of 1931 Commercial Cars

(CONTINUED FROM PAGE NINE)

| Make and Model | Capacity—Tons or Lbs. | Chassis Price | Engine | Valve Arr'g'm't | No. of Cyls. | Bore and Stroke | Piston Disp. | Tax H. P. | Max. Brake H. P. and Peak R. P. M. | Type Camshaft Drive | Radiator Make | Clutch Make | Universals Make | Steering Gear Make | Carburetor Make | Fuel Feed Type | Make Electr'l System | Make Transmission | No. Spds. For. | Rear Axle Make | Type Final Drive | Final Gear Reduction | Type Service Brakes | Area Service Brakes | Standard Wheel Base | Chassis Wgt. | Standard Tire Sizes Front | Rear |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Selden 67 C | 5 | 4975 | Con | H | 6 | 4⅜x4¾ | 427.0 | 45.9 | 100@2400 | C | Own | Br-L | Spic | Ross | Str | Vac | Aut | Br-L | 7 | Wis | 2R | —— | L4IHVA | — | 171 | 8700 | 36x8 | 36x8D |
| Selden 77 | 7 | 7365 | Con | L | 6 | 4¾x5¾ | 611.0 | 54.1 | 127@2300 | G | Own | Br-L | Spic | Ross | Str | Vac | Aut | Br-L | 7 | Wis | 2R | —— | BW41M | — | 178 | 11800 | 40x8 | 42x9D |
| Service Series S 11 | 1 | 1600 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Col | Sp | 25.5 | —— | — | 142 | 3900 | 30x5P | 30x5P |
| Service Series S 11 | 1½ | 1900 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Sp | 29.2 | L4IH | 297 | 162 | 4300 | 30x5P | 30x5DP |
| Service Series 40 | 1½ | 2990 | Bud | L | 6 | 3⅜x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Wo | 34.8 | L4IH | 394 | 168 | 4700 | 34x5P | 34x5DP |
| Service Series S 11 | 2 | 2030 | Bud | L | 6 | 3⅜x4½ | 241.6 | 27.3 | 53@2200 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Sp | 29.2 | L4IH | 297 | 162 | 4500 | 32x6 | 32x6D |
| Service Series 40 | 2 | 3240 | Bud | L | 6 | 3⅜x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Wo | 34.8 | L4IH | 394 | 168 | 4900 | 36x6 | 36x6D |
| Service Series 40 | 2½ | 3240 | Bud | L | 6 | 3⅜x5 | 309.6 | 31.5 | 64@2100 | G | Long | Br-L | Blo | Han | Zen | Vac | Aut | Br-L | 4 | Tim | Wo | 34.8 | L4IH | 394 | 168 | 5100 | 36x6P | 36x6D |
| Service Series 60 | 2½ | 4580 | Bud | L | 6 | 4⅛x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Tim | Wo | 63.0 | L4IH | 584 | 175 | 7000 | 36x6 | 36x6D |
| Service Series 60 | 3 | 4680 | Bud | L | 6 | 4⅛x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Ful | Blo | Han | Zen | Vac | Aut | Ful | 5 | Tim | Wo | 63.0 | —— | — | 175 | 7100 | 36x6 | 38x7D |
| Service Series 80 | 3½ | 5250 | Bud | L | 6 | 4⅛x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Borg | Blo | Ross | Zen | Vac | Aut | Br-L | 7 | Tim | Wo | 98.2 | —— | — | 175 | 8200 | 36x6S | 36x12S |
| Service Series 80 | 4 | 5330 | Bud | L | 6 | 4⅛x5⅛ | 411.0 | 40.8 | 83@2100 | G | Long | Own | Blo | Ross | Zen | Vac | Aut | Br-L | 7 | Tim | Wo | 98.2 | —— | — | 175 | 8400 | 38x6S | 38x14S |
| Service Series 100 | 5 | 5830 | Bud | L | 6 | 4⅛x5⅛ | 410.9 | 40.8 | 83@2100 | G | Long | Own | Blo | Ross | Zen | Vac | Aut | Br-L | 7 | Tim | Wo | 95.0 | —— | — | 175 | 9600 | 38x6S | 40x14S |
| Stewart 30 | 1 | 695 | Lyc | L | 4 | 3¾x4½ | 199.0 | 22.5 | 50@2600 | G | Fed | Borg | Spic | Ross | Str | P | DR | W-G | 4 | Sal | Sp | 25.1 | B4IM | .. | 130 | *3158 | 20x6.50 | 20x6.50 |
| Stewart 30X | 1 | 795 | Lyc | L | 6 | 3 x4¾ | 185.0 | 23.8 | 60@2800 | G | Fed | Borg | Spic | Ross | Str | P | DR | W-G | 4 | Sal | Sp | 25.1 | B4IM | .. | 130 | 3199 | 20x6.50 | 20x6.50 |
| Stewart 40 | 1½ | 895 | Lyc | L | 4 | 3¾x4½ | 199.0 | 22.5 | 50@2600 | G | Fed | Borg | Spic | Ross | Str | P | DR | W-G | 4 | Cla | Sp | 35.1 | B4IM | .. | 130 | 3531 | 20x6.50 | 20x6.50D |
| Stewart 40 X | 1½ | 995 | Lyc | L | 6 | 3 x4½ | 201.5 | 23.8 | 60@2800 | G | Fed | Borg | Spic | Ross | Str | P | DR | W-G | 4 | Sal | Sp | 35.1 | B4IM | .. | 130 | 3574 | 20x6.50 | 20x6.50D |
| Stewart 34 X | 1½ | 1195 | Lyc | L | 6 | 3½x4½ | 224.0 | 25.3 | 61@2600 | G | Own | Borg | Spic | Ross | Str | P | DR | W-G | 4 | Cla | Sp | 35.1 | B4IM | .. | 145 | 3891 | 20x6.50 | 20x6.50D |
| Stewart 28 X | 2 | 1495 | Lyc | L | 6 | 3½x4½ | 224.0 | 25.3 | 61@2600 | G | Own | Ful | Spic | Ross | Str | P | DR | Ful | 4 | Cla | Sp | 44.1 | B4IM | .. | 136 | 4239 | 20x6.50 | 20x6.50D |
| Stewart 29 X S | 2 | 1695 | Lyc | L | 6 | 3⅝x4½ | 278.0 | 25.3 | 85@2750 | G | Own | Ful | Spic | Ross | Str | P | DR | Ful | 4 | Cla | Sp | 44.1 | B4IM | .. | 145 | 4194 | 32x6 | 32x6D |
| *Stewart 18 X | 2½ | 2690 | Lyc | L | 6 | 3⅞x5 | 310.0 | 31.5 | 85@2750 | G | Own | Ful | Spic | Ross | Str | P | DR | Ful | 4 | Tim | Wo | 48.1 | B4IM | .. | 165 | 6245 | 32x6 | 32x6D |
| Stewart 32 X | 2½ | 1995 | Lyc | L | 6 | 3⅝x4½ | 278.0 | 31.5 | 80@2500 | G | Mod | Ful | Spic | Ross | Str | P | DR | Ful | 4 | Cla | Sp | 46.1 | B4IM | .. | 165 | 5552 | 32x6 | 32x6D |
| Stewart 35 X | 3 | 2590 | Lyc | L | 6 | 3¾x4½ | 299.0 | 33.8 | 85@2750 | G | Fed | Ful | Spic | Ross | Str | P | DR | Ful | 4 | Cla | Sp | 46.1 | B4IM | .. | 165 | 5224 | 20x8.25B | 20x8.25D |
| Stewart 36 X | 3 | 2990 | Lyc | L | 6 | 3⅞x5 | 354.0 | 36.2 | 90@2750 | G | Fed | Borg | Spic | Ross | Str | P | DR | Br-L | 4 | Tim | Wo | 105.1 | B4IM | .. | 165 | 6864 | 20x8.25 | 20x8.25D |
| Stewart 19 X | 3½ | 3690 | Lyc | L | 6 | 3⅞x5 | 354.0 | 36.2 | 90@2750 | G | Mod | Ful | Spic | Ross | Str | P | DR | Ful | 12 | Tim | Wo | 105.1 | B4IM | .. | 165 | 7474 | 34x7 | 34.7D |
| Stewart 38-8 | 3½ | 3990 | Lyc | L | 8 | 3¾x4¾ | 462.0 | 44.4 | 130@2800 | G | Fed | Borg | Spic | Ross | Str | P | DR | Br-L | 12 | Tim | 2R | 105.1 | B4IMV | .. | 170 | 7964 | 20x9.00 | 20x9.00D |
| Stewart 38-6 | 3½ | 3990 | Wak | L | 6 | 4⅜x5½ | 420.0 | 45.9 | 100@2000 | G | Fed | Borg | Spic | Ross | Str | P | DR | Br-L | 12 | Tim | 2R | 105.1 | B4IMV | .. | 170 | 7964 | 20x9.00 | 20x9.00D |
| Stewart 31 X | 5 | 4990 | Wak | L | 6 | 4⅜x5½ | 462.0 | 45.9 | 100@2000 | G | Mod | Ful | Spic | Ross | Str | P | DR | Ful | 8 | Tim | Wo | 105.1 | B4IMV | — | 165 | 6885 | 36x6S | 36x6SD |
| Stewart 27 X | 7 | 5700 | Wak | L | 6 | 4⅜x5½ | 462.0 | 45.9 | 100@2000 | G | Own | Ful | Spic | Ross | Str | P | DR | Ful | 8 | Tim | Wo | 105.1 | B4IMV | — | 165 | 10512 | 36x7 | 40x7D |
| Studebaker S-1 | ½ | 595 | Own | L | 6 | 3⅜x4½ | 221.0 | 27.3 | 70@3200 | C | McC | Long | Spic | Ross | Str | P | DR | W-G | 3 | Own | Sp | 16.4 | B4IM | 148 | 114 | *2897 | 19x5.25 | 19x5.25 |
| Studebaker S-20 | 1½ | 695 | Own | L | 6 | 3¼x4½ | 205.0 | 25.4 | 70@3200 | C | McC | Long | Spic | Ross | Str | P | DR | W-G | 4 | Tim | Sp | 36.2 | B4IM | 224 | 130 | 3044 | 20x6.00 | 32x6 |
| Studebaker S-30 | 1½ | 775 | Own | L | 6 | 3¼x4½ | 205.0 | 25.4 | 70@3200 | C | McC | Long | Spic | Ross | Str | P | DR | W-G | 4 | Tim | Sp | 36.2 | B4IM | 224 | 160 | 3199 | 20x6.00 | 32x6 |
| Studebaker S-10 | 2 | 895 | Own | L | 6 | 3¼x4½ | 205.0 | 25.4 | 70@3200 | C | McC | Long | Cle | Ross | Str | P | DR | W-G | 4 | Tim | Sp | 37.4 | B4IM | 276 | 136 | 3825 | 20x6.50 | 20x6.50D |
| Studebaker S-40 | 2 | 920 | Own | L | 6 | 3¼x4½ | 205.0 | 25.4 | 70@3200 | C | McC | Long | Cle | Ross | Str | P | DR | W-G | 4 | Tim | Sp | 37.4 | B4IM | 276 | 148 | 3855 | 20x6.50 | 20x6.50D |
| Studebaker S-50 | 2 | 945 | Own | L | 6 | 3¼x4½ | 205.0 | 25.4 | 70@3200 | C | McC | Long | Cle | Ross | Str | P | DR | W-G | 4 | Tim | Sp | 37.4 | B4IM | 276 | 160 | 3909 | 20x6.50 | 20x6.50D |
| Studebaker 88 | —— | 3295 | Own | L | 8 | 3½x4¾ | 337.0 | 39.2 | 115@3200 | G | Long | Long | Spic | Ross | Str | P | DR | Ful | 4 | Eat | Sp | 24.6 | B4IMV | 444 | 184 | 5413 | 20x7.50 | 20x7.50D |
| Studebaker 99 | —— | 3795 | Own | L | 8 | 3½x4¾ | 337.0 | 39.2 | 115@3200 | G | Long | Long | Spic | Ross | Str | P | DR | Ful | 4 | Eat | Sp | 24.6 | B4IMV | 505 | 184 | 5680 | 20x7.50 | 20x7.50D |
| White 15B | *7,500 | 1545 | Own | L | 4 | 3¾x5⅛ | 226.4 | 22.5 | 31@1600 | G | Own | Own | Spic | Own | Zen | Vac | L-N | Own | 4 | Own | Sp | 18.6 | O2XM | 228 | 133½ | 7402 | 30x5 | 30x5 |
| White 160 | *8,000 | 1700 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1800 | G | — | Own | Mec | Han | Zen | Vac | DR | Own | 3 | Own | Sp | 19.5 | L4IH | 276 | 138 | 4025 | 30x5 | 30x5 |
| White 60 | *8,000 | 1850 | Own | L | 6 | 3½x4½ | 260.0 | 29.4 | 54@2100 | C | Own | Own | Mec | Han | Zen | Vac | DR | Own | 3 | Own | Sp | 17.8 | L4IH | 276 | 138 | 3739 | 30x5 | 30x5D |
| White 161 | *9,000 | 1850 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1800 | G | — | — | Own | Mec | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 19.5 | L4IH | 276 | 138 | 4290 | 34x7 | 34x7 |
| White 162 | *10,000 | 1900 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1800 | G | — | — | Own | Mec | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 19.5 | L4IH | 276 | 138 | 4260 | 30x5 | 30x5D |
| White 210 | *10,000 | 2300 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1800 | G | — | — | Own | Spic | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 22.4 | L4IH | 349 | 148 | 4875 | 30x5 | 30x5D |
| White 61 | *10,500 | 2450 | Own | L | 6 | 3¾x4½ | 299.0 | 33.7 | 61@2100 | C | Own | Own | Spic | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 23.4 | L4IH | 349 | 148 | 4789 | 30x5 | 30x5D |
| White 611 | *11,500 | 2550 | Own | L | 6 | 3¾x4½ | 299.0 | 33.7 | 61@2100 | C | — | — | Own | — | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 23.4 | L4IH | 349 | 148 | 4880 | 20x7.00B | 20x7.00DB |
| White 211 | *11,500 | 2425 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1800 | G | — | — | Own | Spic | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 23.4 | L4IH | 349 | 148 | 5110 | 32x6 | 32x6D |
| White 212 | *13,000 | 2700 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1800 | G | — | — | Own | Spic | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 23.4 | L4IH | 349 | 148 | 5230 | 34x7 | 34x7D |
| White 56 | *13,000 | 3125 | Own | L | 4 | 4 x5¾ | 289.0 | 25.6 | 45@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | Sp | 26.2 | O2IM | 268 | 165 | 5278 | 36x4 | 36x7 |
| White 612 | *13,000 | 2800 | Own | L | 6 | 3¾x4½ | 299.0 | 33.7 | 61@2100 | C | — | — | Own | — | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 23.4 | L4IH | 349 | 148 | 5100 | 20x7.50B | 20x7.50DB |
| White 620 | *15,000 | 4350 | Own | H | 6 | 4 x5¼ | 396.0 | 38.4 | 72@1800 | G | Own | Own | Spic | Own | Zen | P | DR | Own | 4 | Own | Sp | 41.8 | O14IHV | — | 157 | 7300 | 20x8.25B | 20x8.25DB |
| White 51A | *17,000 | 3750 | Own | L | 4 | 4½x5¾ | 326.0 | 28.9 | 54@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | Sp | 35.6 | O2IM | 335 | 170 | 6438 | 36x5 | 36x8 |
| White 51AT | *17,000 | 3875 | Own | L | 4 | 4½x5¾ | 326.0 | 28.9 | 54@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | Sp | 46.6 | O2IM | 335 | 134 | 6227 | 36x5 | 36x8 |
| White 621 | *18,000 | 4650 | Own | H | 6 | 4 x5¼ | 396.0 | 38.4 | 72@1800 | C | Own | Own | Spic | Ross | Zen | P | DR | Own | 4 | Own | Sp | 41.4 | OL4IHV | — | 157 | 7700 | 20x9.00B | 20x9.00DB |
| White 649 | *20,000 | 6100 | Own | H | 6 | 4⅜x5⅜ | 519.0 | 45.9 | 96@1800 | C | Own | Own | Spic | Ross | Zen | P | L-N | Own | 4 | Own | Sp | 32.9 | O4IA | — | 180 | 9200 | 20x9.00B | 20x9.00DB |
| White 638 | *20,000 | 5900 | Own | H | 6 | 4 x5¼ | 396.0 | 38.4 | 72@1800 | C | — | Own | Spic | Ross | Zen | P | DR | Own | 4 | Own | Sp | 41.4 | O4IHV | 554 | 168 | 8500 | 20x9.00B | 20x9.00DB |
| White 55 | *21,500 | 4650 | Own | L | 4 | 4½x5¾ | 326.0 | 28.9 | 54@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | 2R | 66.1 | OPXM | 224 | 174 | 8737 | 36x5 | 40x5D |
| White 58 | *22,000 | 4400 | Own | L | 4 | 4½x5¾ | 326.0 | 28.9 | 54@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | 2R | 49.7 | OPXM | 224 | 180 | 7797 | 36x5 | 36x5D |
| White 611 | *24,000 | 6450 | Own | H | 6 | 4⅜x5⅜ | 519.0 | 45.9 | 96@1800 | C | — | Own | Spic | Ross | Zen | P | L-N | Own | 4 | Own | 2R | 46.9 | O4IA | — | 180 | 9700 | 20.9.75B | 20x9.75DB |
| *White 630 SW200 | *24,000 | 6280 | Own | H | 6 | 4 x5¼ | 396.0 | 38.4 | 72@1800 | C | — | Own | Spic | Ross | Zen | P | DR | Own | 4 | Tim | Wo | 44.2 | OT1HV | — | 193 | 10000 | 20x8.25B | 20x8.25DB |
| White 631 | *24,000 | 5750 | Own | H | 6 | 4 x5¼ | 396.0 | 38.4 | 72@1800 | C | Own | Own | Spic | Ross | Zen | P | DR | Own | 4 | Own | 2R | 56.9 | O4IHV | — | 188 | 9000 | 20x9.25B | 20x9.25DB |
| White 52 | *28,000 | 5100 | Own | L | 4 | 4½x5¾ | 326.0 | 28.9 | 54@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | 2R | 58.4 | OPXM | 224 | 174 | 9409 | 36x6 | 40x12 |
| White 52T | *28,000 | 4700 | Own | L | 4 | 4½x5¾ | 326.0 | 28.9 | 54@1600 | G | Own | Own | Spic | Own | Zen | Vac | Eis | Own | 4 | Own | 2R | 75.5 | OPXM | 224 | 129½ | 8461 | 36x5 | 40x5D |
| White 643 | *32,000 | 6950 | Own | H | 6 | 4⅜x5⅜ | 519.0 | 45.9 | 96@1800 | C | Own | Own | Spic | Ross | Zen | P | L-N | Own | 4 | Own | 2R | 66.5 | O4IA | — | 180 | 10900 | 24x10.50B | 24x10.50DB |
| *White 642 SW310 | *34,000 | 8045 | Own | H | 6 | 4⅜x5⅜ | 519.0 | 45.9 | 96@1800 | C | — | Own | Spic | Ross | Zen | P | L-N | Own | 4 | Tim | Wo | 55.6 | OT1HV | — | 198 | 12670 | 20x9.00B | 20.9.00DB |
| White 642 | *34,000 | 6750 | Own | H | 6 | 4⅜x5⅜ | 519.0 | 45.9 | 96@1800 | C | Own | Own | Spic | Ross | Zen | P | L-N | Own | 4 | Own | 2R | 66.5 | O4IA | — | 180 | 10600 | 24x9.75B | 24x9.75DB |
| *White 643 SW410 | *40,000 | 8570 | Own | H | 6 | 4⅜x5⅜ | 519.0 | 45.9 | 96@1800 | C | — | Own | Spic | Ross | Zen | P | L-N | Own | 4 | Tim | Wo | 69.9 | OTIHV | — | 198 | 14400 | 40x8 | 40x8D |
| **White 60K | —— | 2200 | Own | L | 6 | 3½x4½ | 260.0 | 29.4 | 54@2100 | C | — | Own | Mec | Han | Zen | Vac | DR | Own | 3 | Own | Sp | 17.6 | L4IH | 276 | 112 | 5200 | 20x7.00B | 20x7.00B |
| White 601 | —— | 1900 | Own | L | 6 | 3½x4½ | 260.0 | 29.4 | 54@2100 | C | — | Own | Mec | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 19.5 | L4IH | 276 | 138 | 3825 | 20x7.00B | 20x7.00B |
| White 602 | —— | 2050 | Own | L | 6 | 3½x4½ | 260.0 | 29.4 | 50@1800 | C | — | Own | Mec | Han | Zen | Vac | DR | Own | 4 | Own | Sp | 19.5 | L4IH | 276 | 138 | 4125 | 20x7.50B | 20x7.50B |
| Willys 6-C-113 | ½ | 395 | Own | L | 6 | 3¼x3⅞ | 193.0 | 25.3 | 65@3400 | C | Fed | Borg | Spic | Own | Til | P | Aut | Own | 3 | Own | Sp | 12.4 | B4IM | 143 | 113 | 1923 | 19x5.00 | 19x5.00 |
| Willys 6-C-131 | 1½ | 595 | Own | L | 6 | 3¼x3⅞ | 193.0 | 25.3 | 65@3400 | C | Fed | Borg | Spic | Own | Til | P | Aut | W-G | 4 | Cla | Sp | 40.8 | B4IM | 235 | 131 | 2625 | 20x5.50 | 32x6 |
| Willys 6-C-157 | 1½ | 630 | Own | L | 6 | 3¼x3⅞ | 193.0 | 25.3 | 65@3400 | C | Med | Borg | Spic | Own | Til | P | Aut | W-G | 4 | Cla | Sp | 46.8 | B4IM | 235 | 157 | 2900 | 20x5.50 | 32x6 |

## GENERAL NOTATIONS

***REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

**CAPACITIES** given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

**ENGINE**—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry.

**VALVE ARRANGEMENT**—L, "L" head; H, in head; O, overhead; T, T head; S, sleeve.

**TYPE OF CAMSHAFT DRIVE**—G, gear; C, chain.

**RADIATOR MAKE**—G & O, G & O Mfg. Co.; Per, Perfex Corp.; Long, Long Mfg. Co.; Har, Harrison Radiator Corp.; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co.

**CLUTCH MAKE**—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchants & Evans.

**UNIVERSALS MAKE**—Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

**STEERING GEAR MAKE**—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co.; Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

**CARBURETOR**—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

**FUEL FEED**—Gra, gravity; Vac, vacuum tank; P, fuel pump.

**ELECTRICAL SYSTEM**—AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Leece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

**TRANSMISSION**—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

**REAR AXLE**, Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

**FINAL DRIVE**—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

**TYPE OF SERVICE BRAKES**—B4IM, Bendix, 4 wheel, internal mechanical; B6IA, Bendix, 6 wheel, internal air; B4IMV, Bendix, 4 wheel, internal mechanical, vacuum; B2IA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal mechanical; BO4IM, Bendix front, own rear, 4 wheel internal mechanical; B4IH, Bendix, 4 wheel, internal hydraulic; B4, Bendix, 4 wheel.

C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum; LT4DV, Lockheed Timkin, 4 wheel, drive shaft, vacuum; L4IH, Lockheed, 4 wheel, internal, hydraulic; L4IHV, Lockheed, 4 wheel, internal hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 wheel, internal, hydraulic, vacuum; L6IH, Lockheed 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM, Own, 4 wheel, external, mechanical; OJXM, Own, jack shaft, external, mechanical; OL4IH, Own, Lockheed, 4 wheel, internal, hydraulic; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4tIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air. W6IA, Westinghouse 6 wheel, internal, air. 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic; 4M, 4 wheel, mechanical.

**WHEEL BASES** given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

**TIRES**—B, balloon; D, dual; S, solid; P, pneumatic.

## SPECIAL NOTATIONS

### AMERICAN-LA FRANCE

*Chief model also available as 2½-ton model, 34x7 tire, dual rear; weight, 6,400. Price, $3,900.

Chieftain model also available as dump truck, 160-inch wheel base.

Balloon tires optional on Chief, Chieftain and Big Chief models.

### AUTOCAR

*Engines in these models are located under the driver's seat.

### BROCKWAY

*Six-wheelers

### CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

### DAY ELDER

*Six-wheeler

Additional standard wheel bases are available on different models as follows:

| | | | |
|---|---|---|---|
| 85.....146, 168 | | 240.....204 | |
| 110.....168, 188 | | 285.....204 | |
| 130.....163, 187, 193 | | 345.....204 | |
| 160.....165, 180, 204 | | 402.....204 | |

### DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.

### DIAMOND T

*Six-wheelers.

Additional standard wheel bases available as follows:

| | | | |
|---|---|---|---|
| 551.....158 | 750.....167, | 182 | |
| 504.....166½ | 801.....180½, | 199¼ | |
| 506.....174 | 1200.....174½, | 180 | |
| 603.....157, 179 | 1600.....174½, | 183 | |
| 606.....177½ | 1601.....184 | | |

### F. W. D.

*Indicates six-wheel model.

The BTL and BT models are special line construction trucks in which complete provision for mounting AT and T earth boring machine, winch, body and other line construction accessories is included in the standard chassis.

Special power take-off transmission, which provides 3 power take-offs which may be operated in any transmission speed, optional on all models.

### FEDERAL

*Six-wheelers.

†Solid tires standard, no spare rim or tire.

### GRAMM

| Series | Straight Rating | Wheel Base | Pay Load Range |
|---|---|---|---|
| AX 4 | 8,000 | 157 | 1 to 1½ tons |
| AX 6 | 8,000 | 157 | 1 to 1½ tons |
| BX 4 | 10,000 | 157 | 1½ to 2 tons |
| BX 6 | 10,000 | 157 | 1½ to 2 tons |
| CX 4 | 12,000 | 157-180 | 2 to 3 tons |
| CX 6 | 12,000 | 157-180 | 2 to 3 tons |
| B | 12,000 | 157-174 | 1¾ to 2½ tons |
| C | 14,000 | 145-196 | 2 to 3 tons |
| D | 17,000 | 145-196 | 2½ to 4 tons |
| E | 20,000 | 145-196 | 3 to 4½ tons |
| EY | | | 3 to 4 tons |
| GY | | | 4 to 5 tons |
| GW | 26,000 | 157-240 | 5 to 7½ tons |
| HY | | | 5 to 6½ tons |

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

### GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis, body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting pay load range (assuming nominal body allowance) for each model follows:

Note: Models T-15 to T-80, inclusive, are available for export only as coach chassis.

| Model | Wheel Bases | Tire Types | Range of Rec'd Gross Weights | Pay Load Range |
|---|---|---|---|---|
| T-11 | 1 | 1 | 3800 | ½ |
| T-15 | 3 | 10 | 4500- 6500 | ½-1½ |
| T-17 | 2 | 3 | 5500- 6500 | 1-1½ |
| T-19 | 3 | 22 | 6500- 8500 | 1½-2 |
| T-25 | 3 | 17 | 6800- 9000 | 1½-2 |
| T-26 | 4 | .. | 8500-11000 | 2-3 |
| T-30 | 3 | 16 | 10000-12500 | 3-3 |
| T-31 | 4 | .. | 11000-14000 | 3½-4 |
| T-42 | 4 | 12 | 12000-15000 | 2½-4 |
| T-44 | 4 | 12 | 12000-16000 | 3-4½ |
| T-45 | 4 | .. | 13500-16000 | 3-4½ |
| T-51 | 4 | .. | 16500-19000 | 4-5½ |
| T-55 | 4 | .. | 16500-19000 | 4-5½ |
| T-60 | 4 | 18 | 18500-22000 | 5-6½ |
| T-61 | 4 | .. | 19500-22000 | 5-6½ |
| T-82 | 4 | 12 | 19000-24000 | 5-7 |
| T-83 | 4 | .. | 20000-24000 | 5-7 |
| T-85 | 3 | .. | 22000-26000 | 5-7 |
| T-90 | 3 | 7 | 22000-28000 | 5-7½ |
| T-95 | 3 | .. | 28000-34000 | 7-9 |
| T-96 | 3 | .. | 28000-34000 | 7-9 |

‡Models T-90, T-95 and T-96 are six-wheelers, the latter having one driven and one trailing axle. Optional rear axle gear ratios available for all models. Double reduction axles available for Models T-60, T-61, T-82 and T-83.

### INDIANA

*Six-wheelers.

### MACK

Other wheel bases furnished on all truck models.

On 6-wheel jobs 4 rear wheels driven by chains, foot brake on 4 rear wheels.

††Made also in tractor models.

### PAIGE

*Price includes panel or screen body. †Chassis weight given does not include gas, water, etc.

### PIERCE-ARROW

*Optional final drive on Models PW, FX, PY and PZ.

### REO

Models DF 129, DF, FA, FE and FF are available with duel wheels at additional cost.

*Models DF129 and DF 135 can be had with either 3 or 4 speed transmission.

### SELDEN

Additional standard wheel bases are available on different models as follows:

| | |
|---|---|
| Model 37C..... | 162 and 181 |
| 39C..... | 177 and 190½ |
| 47CB, 47CD.. | 151, 164 and 184 |
| 67C.....151, 164, 184 and 198 | |

### STEWART

Models 30 and 30X can also be supplied in 110, 120, 140 and 160-inch wheel base.

Models 40 and 40X can also be supplied in 110, 140 and 160-inch wheel base.

*Models 34X can be supplied in 135, 145, 160 and 176-inch wheel base.

Model 28X can be supplied in 130, 145, 160 and 176-inch wheel base.

Model 29XS can be supplied in 135, 160 and 176-inch wheel base.

*Models 18X, 32X and 36X can be supplied in 148, 190 and 220-inch wheel base.

*Models 19X, 31X and 27X can be supplied in 148, 172, 190, 220 and 235-inch wheel base.

As optional equipment Models 18X, 19X, 36X, 31X and 27X can be supplied with Timken dual reduction rear axle.

Models 38-8 and 38-6 can be supplied in 150, 160, 170, 196, 226 and 241-inch wheel base and worm axle.

### STUDEBAKER

Maximum gross load, chassis, body and pay load for Model 88 to 12,500 pounds and for Model 99 is 14,000 pounds.

‡Hand brake same as foot brake, standard. Hand brake on drive shaft, special equipment.

### WHITE

*Six-wheelers.

**Price on Model 60K includes body.

## SEARS EXPERIMENTING WITH SERVICE STATION; MAY PUT IN 45 MORE

**CHICAGO, Aug. 6.—Sears, Roebuck & Co. is establishing an experimental automobile service station in the parking lot adjacent to its store in its Chicago mail order house.**

The success of this station will determ

# Production - - Engineering - - Factory

## Studebaker Announces New 1½ Ton Truck Model

(Continued from Page 1)

A Swan-type intake manifold is used.

Cooling is provided by a deep tubular-type radiator of 3½ gallons capacity. The water pump circulates 45 gallons per minute at 40 m. p. h.

The clutch is of the single disk dry-plate type.

A heavy-duty transmission provides four forward speeds and one reverse. The shafts and gears are of alloy steel and are carried in heavy bearings. Gear ratios are: First, 6.40 to 1; second, 3.09 to 1; third, 1.69 to 1; high direct; reverse, 7.82 to 1.

Front axle is of conventional truck design. Large size spindles are carried in Timken bearings.

Semi-elliptic springs are used front and rear. The front springs are 36 inches long and 1¾ inches wide and have eight leaves. The rear springs carried on heavy duty out-rigger hangers are 45 inches long, 2½ inches wide and have ten leaves. Special auxiliary springs are optional on special order at extra cost. Torque is taken through the rear springs.

On the 130-inch wheel base chassis, five strong cross-members are provided; the 160-inch chassis has seven cross members.

Four-wheel brakes are of the improved Bendix two-shoe type, cable controlled. Molded brake linings are used. Hand brake lever operates service brakes.

Single steed disc wheels 20 x 5 are standard, with duals at the rear optional at extra cost. One spare wheel is provided in a cradle.

Steering gear used is Ross cam-and-lever with 17-inch wheel.

Steel cowl with hood and front fenders. Radiator and front bumpers are chromium plated.

In addition to the instrument panel, which carries speedometer, ammeter, gas gauge, oil pressure gauge and engine temperature indicator, the combination ignition switch and light controls are mounted on the dash. Another Studebaker truck feature is the auxiliary foot button light control, permitting the driver to change headlights from long to short range without removing his hands from the steering wheel.

Studebaker offers a de luxe all-weather cab on both chassis. Special attention has been given to the driver's comfort and convenience. The doors are 28½ inches wide, with 23-inch windows which drop flush from the sills. The rear window is 25⅝ inches wide. Narrow steel pillars give full vision for the driver. The seats are comfortably upholstered and ample leg room is provided.

All standard bodies are available, including panel, screen, express stake, canopy, grain, cattle and dump bodies.

Studebaker has definitely committed itself to a program of providing excess power and excess strength in its truck chassis which will more than meet any possible demand in trucks of ton and a half and two-ton capacity. Every mechanical feature has been carefully engineered with this thought in mind.

## STERLING BUILDS HUGE FUEL DUMPING TRUCK

**Milwaukee, Wis.,** Aug. 6.—The Sterling Motor Truck Company recently delivered what officials state is one of the largest dump trucks ever constructed. It was made for J. J. Finnegan of Providence, R. I., for fuel deliveries for the New England Coal and Coke Company.

The Sterling chain drive chassis is powered with a six-cylinder engine which develops 100 horse power. An auxiliary transmission is built as a unit with the jackshaft and provides twelve forward speeds and a road speed of more than 30 miles an hour when loaded.

The use of the six-wheel attachment gives a carrying capacity of 12 to 13 tons. The body was built by the Heil Company and has a capacity of 18 cubic yards. It was constructed entirely of aluminum and weighs only 2,650 pounds.

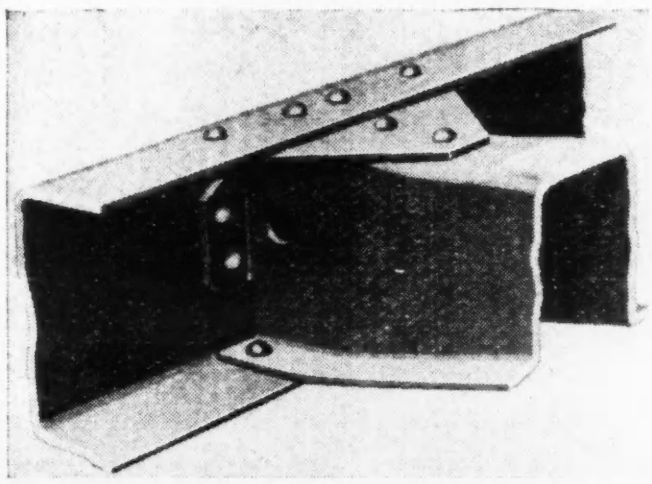
## BORG & BECK BOOST PRODUCTION OF NEW VIBRATION DAMPER

(Continued from Page 1)

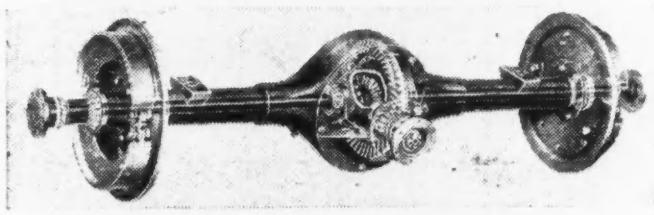
truck manufacturers, who plan to use it imediately as standard equipment.

Replacement business from various parts of the country also has contributed somewhat to the cause for increasing its volume.

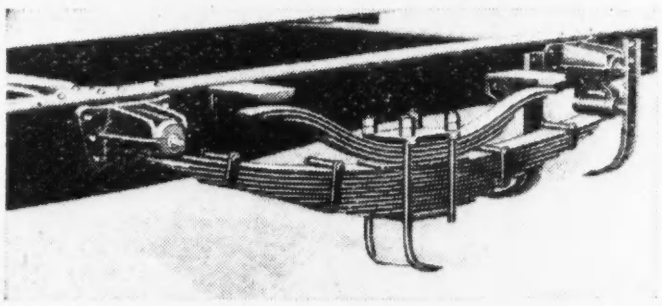
This new type of vibration damper was brought out a few months ago by Borg & Beck. It has an aluminum retainer riveted directly to the main clutch plate and there is a free space between a rubber member and the hub, which aids in the absorption and reduction in chafing. It has six spokes that are cushioned by a molded rubber member retained in an aluminum die casting. Greater quietness and longer serviceability are among the reasons given for its increased sales demand.



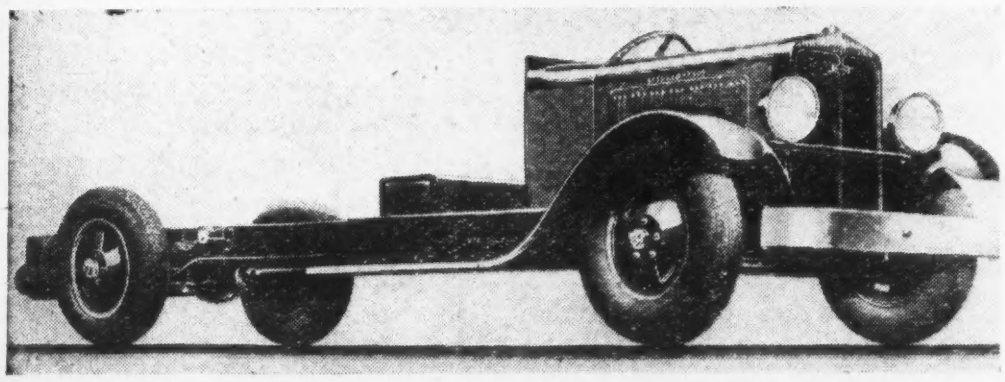
DETAIL OF Studebaker 1½-ton chassis frame construction



STUDEBAKER 1½-TON full-floating rear axle



VIEW OF AUXILIARY rear spring and outrigger-type spring hangar for mounting rear springs



STUDEBAKER 1½-TON CHASSIS is offered in 130 and 160 inch wheelbases. Dual rear wheels and auxiliary rear springs are optional

## Study of Fuels and High Compression Engines

By EARL BARTHOLOMEW
Director of Engineering, Ethyl Gasoline Corporation, Detroit, Mich.

**The following, in part, is the second installment of a paper presented before the Baltimore Section, Society of Automotive Engineers, Baltimore, Md.**

Fig. 3 shows the effect of octane number of fuel on the approximate brake mean effective pressure possible in supercharged aircraft engines as built at present. There is little doubt that even this performance will be improved in the next few years.

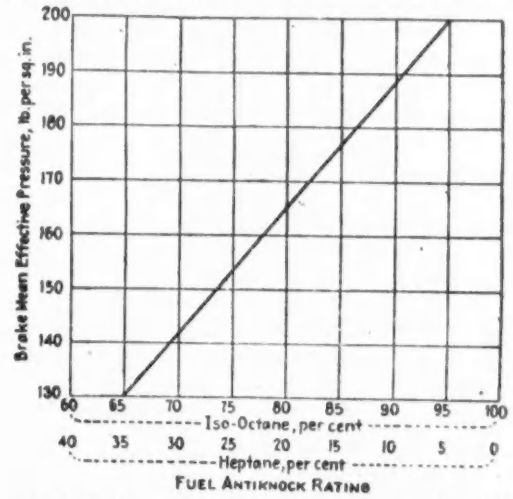



FIG. 3—Relation of B. M. E. P. to octane number of fuel

No study of engine efficiency would be complete without a consideration of the Diesel engine. Fig. 4 shows a Diesel cycle of 13 to 1 ficiency is comparable with that of compression ratio. The thermal ef- the Otto cycle of 6 to 1, but thme power output per cubic inch is slightly less.

To match the efficiency and power output per unit volume of the 10 to 1 compression Otto engine, a compression ratio of more than 20 to 1 is required on the Diesel cycle.

From a purely thermodynamic consideration it is obvious that a substantial increase in power output and decrease in fuel consumption results from increases in compression ratios up to about 8.0 to 1 and that Otto engines are as efficient as Diesel engines of approximately twice the compression ratio. Such a study also indicates the almost unlimited possibilities of supercharging. A practical study introduces many additional factors which increase the advantages of high compression Otto cycle engines and practically nullify the high thermodynamic efficiency of Diesel engines for light-weight automotive vehicles.

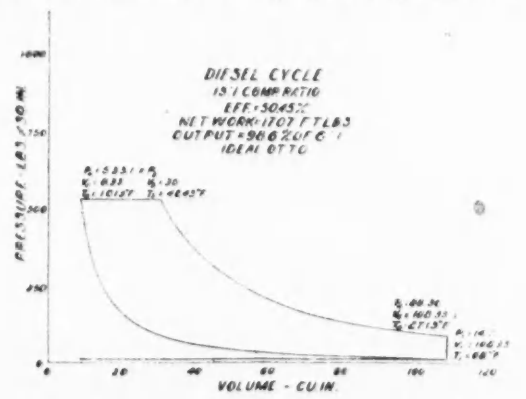



FIG. 4 ideal 13 to 1 compression Diesel engine indicator card

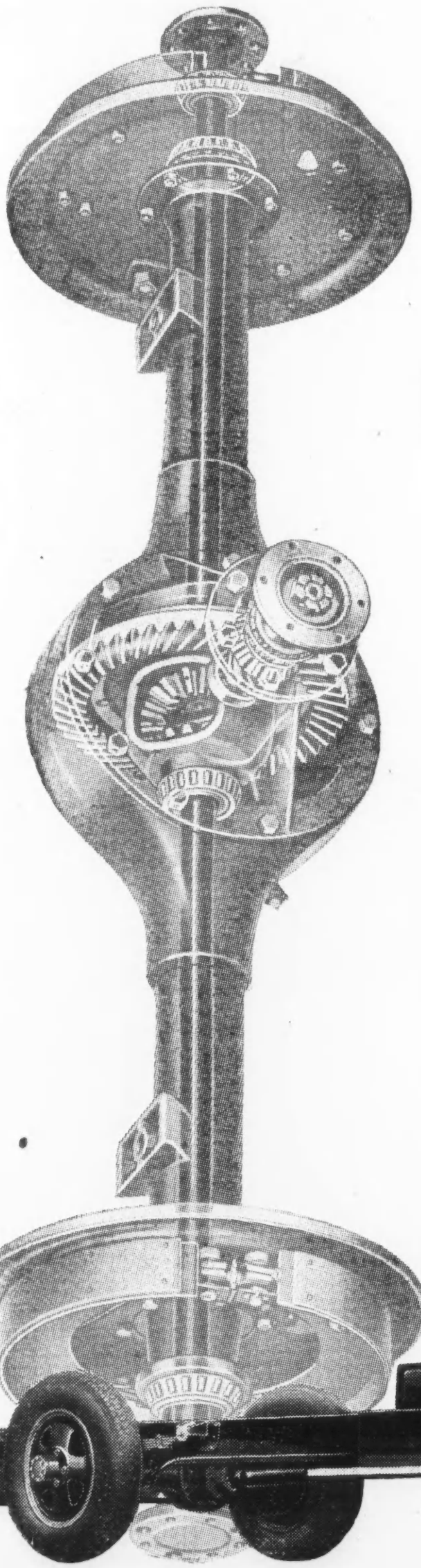
**Engine Design for Increased Performance**

To those unacquainted with the problem it probably appears that the provision of almost unlimited acceleration in an automobile by a mere increase in bore and stroke of the engine until sufficient power is provided should be a simple matter, but an automotive engineer acquainted with the facts can quickly dispel this notion. We have seen manufacturers increase the bore of an engine by ⅛ inch or more in an attempt to gain added acceleration, only to find that the reduced compression pressure made necessary by the larger engine for the same freedom from detonation on a given fuel caused the power output not to exceed and, in some cases, to be less than that of the smaller engine previously used. A larger engine usually necessitates a longer wheel base if room is not to be sacrificed in the car itself. Longer frames require greater strength and weight, which, in turn, require an increase in the size of other members; and so the problem proceeds in a vicious circle.

Engines of large bore, of a given design and construction, attain higher combustion chamber temperatures than those of smaller bore. On account of the direct relation between combustion chamber temperature, volumetric efficiency and pre-ignition tendency, there is an economic limit on cylinder size.

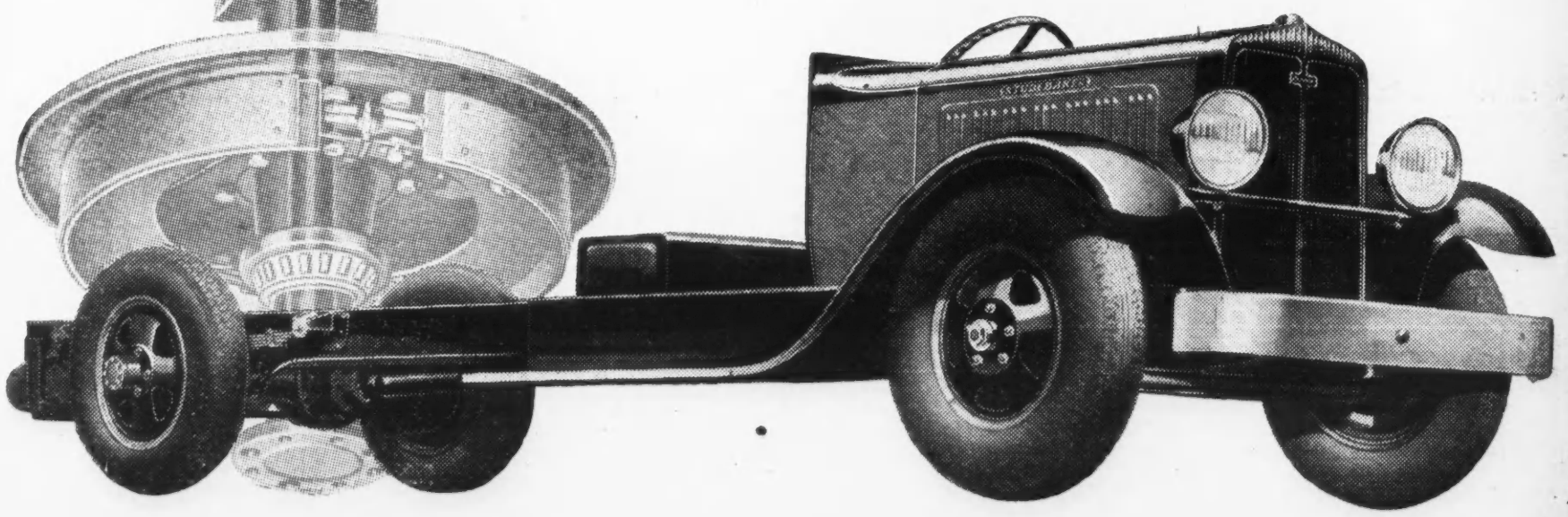
Mechanical troubles have been found to increase quite rapidly with increases in bore. Minimum piston clearances are directly proportional to bore size, but desirable piston clearances are determined entirely by compression leakage during starting and low speed running. The necessarily large clearances of large bore pistons increase oil pumping, oil consumption, carbon formation and spark plug fouling. The flow of heat through the exhaust port becomes quite large for cylinders of large displacement, adding to the problem of cooling the exhaust valve. Both intake and exhaust valves of large displacement cylinders are heavy and noisy. Localized hot spots in large cylinders invariably cause rough combustion. The present tendency to increase the number of cylinders, instead of increasing the size of a smaller number of cylinders, indicates the understanding of this design problem by automotive engineers.

(To be Continued)



# 70-Horsepower 6-Cylinder STUDEBAKER 1½-Ton Truck *with a* FULL FLOATING *Rear Axle*

**$695** *at the factory*

One year ago Studebaker announced the most powerful 1½-ton truck ever sold as low as $695—and the world's lowest priced 2-ton truck ($895). Studebaker truck registrations jumped from 18th to 6th place.

Now Studebaker offers even greater value—a full floating rear axle in its 1½-ton chassis as well as in the 2-ton chassis. Both have 70-horsepower, 6-cylinder engines, 4-speed transmissions, cam and lever steering and stalwart frames. These trucks are built to Studebaker's 79 years of quality traditions.